

NOISE

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BULLETIN

MAPPING

NI counts noise exposure

In a move that will further isolate England, Northern Ireland has completed its noise mapping. Welsh maps are due within days.

Scotland posted its consolidated maps last year (*Noise Bulletin October p1*), but it appears that Northern Ireland is the first to tot up how many people affected by noise. This is the information required under the European mapping directive. A Northern Ireland insider told *NB*: "Northern Ireland is the first country in Europe to report such to the European Commission."

This underlines the rivalry between the UK regions on

mapping. Following a promising early start, paralysis at Defra has meant that it has only managed London road maps and skeletal maps of airport contours (see page three). Scotland proudly produced its integrated maps with a sophisticated web interface, and now Northern Ireland has trumped that by including population estimates.

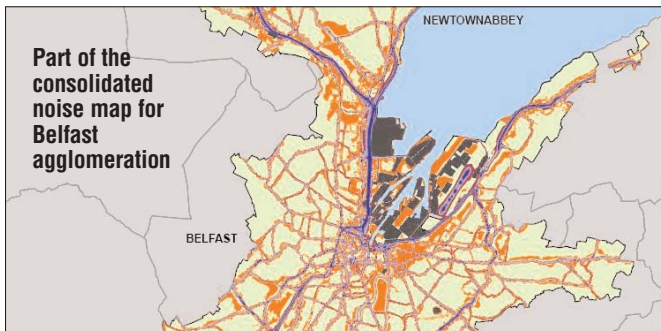
Defra has in the past excused its poor performance claiming that it has a far larger and more complicated task. £13m was initially set aside to reflect this complexity, but problems on the agricultural side of Defra has meant continued and repeated

cuts to the environmental protection budget, severely curtailing the team's output.

Northern Ireland's maps produced for the Department of the Environment have been managed by iSoniq aided by consultant Hepworth Acoustics, Irish environmental firm AWN Consulting and Bureau Veritas UK. Isoniq is a joint venture run by acousticians Simon Shilton and Nigel Jones operating as Isoniq.

Maps can be viewed on an interactive website – (www.noiseni.co.uk). Road, rail, aviation and industrial sources can be viewed separately or on a consolidated map. The consolidated maps have been used to set out quiet areas, again a requirement of the directive: "Areas on the consolidated noise map for the Belfast agglomeration have been identified as candidate quiet areas and equate to those areas below the L_{den} 55dB and L_{night} 50dB noise bands. These are the lower limits required for noise mapping by the

● continued on page three



LAW

St Albans bar row spills over to High Court

St Albans District Council is pursuing a case to the High Court that will test a defendant's 'best practical means' defence.

The council served an abatement notice on a bar because of complaints about noise from the pub garden. The bar ignored the abatement notice and was prosecuted by the council, the publican said it

was using best practical means to reduce the nuisance, this was disputed by the council, but the court overturned the notice.

St Albans told *Noise Bulletin*: "The Mokoko pub was prosecuted by the district council in the magistrates' court under the Environmental Protection Act 1990, due to noise nuisance. The magistrate ruled in favour of the pub and

against the council. However the district council is appealing to the High Court against this ruling, on the grounds that the Magistrates were wrong to conclude that the defence of best practicable means had been established. Proceedings have been lodged in the Administrative Court office of the High Court.

● continued on page three

HIGHLIGHTS INSIDE...

NEWS

- 2** Hyena research confirms blood pressure link
- 3** English publish contours for its busiest airports

FEATURES

- 4** Quiet deliveries: John Connell recognises efforts to date
- 6** EPUK discusses the pros and cons of microgeneration

8 COMING EVENTS

SOUND BITES

- 8** Seemingly pointless research, bonds to cut train horn nuisance and plane porkies

IN BRIEF

Video capture

A large rise in complaints about late night rowdiness at pubs has prompted the launch of a video based nuisance logging system.

Monitor firm Campbell Associates reports that since the introduction of the smoking ban in England in July 2007, introduction of outdoor smoking shelters has led to increased complaints from nearby residents.

Campbell Associates says: "Investigating these complaints is time consuming and often impractical as the complaints are out of hours and have often resolved themselves before an investigating officer arrives. Using unattended measurement instrumentation is popular where sound levels are logged in parallel with audio recordings – but they don't show where the noise is coming from."

Campbell Associates and Norsonic have worked with local authorities to design the Nor-140/VID system which integrates video recordings, sound level measurements and full fidelity audio. The system logs sound levels constantly but video and audio is only collected when a user hand switch is activated. This saves time during analysis as video is limited to when the complainant sees there is a problem.

The video recordings also have a pre trigger to store video and audio one minute before the hand switch is activated. Loud noise events can then be assigned to causes such as open doors, anti social behaviour and problems associated with closing time.

The system can also be activated by trigger sound levels and also installed as permanent city centre monitors with data being collected automatically by wireless network connections.

● More details: www.campbell-associates.co.uk

IN BRIEF

Flat tyres

European lobby group T&E reports that the European Commission has "once again" postponed proposals on limiting road noise from tyres by six months.

It explains: "The existing directive, which dates from 2001, was only supposed to be an introductory measure, with new proposals to be presented by the end of 2004. The latest deadline for the revision was the end of this year, but last month the Commission announced there would be no new proposals until June."

T&E's Nina Renshaw added: "It's hard to know what we can do to get noise taken seriously in Brussels. The existing directive was so weak when it came into force that it did nothing to encourage improved noise-reduction technology, and now the Commission is clearly in no rush to update it. It's a kick in the teeth for all those who suffer from excessive noise who had hoped the EU would offer them some help."

● www.transportenvironment.org

Health fillip

EPUK (formerly NSCA) has suggested that prime minister Gordon Brown considers spending more on the environment to improve public health.

Speaking after Brown announced an increase in screening for health issues such as heart disease, EPUK said: "A healthier environment can help prevent people from becoming sick in the first place. Air quality and environmental noise are two areas where a great deal of evidence exists on the negative health effects, and we need to ensure more resources are brought to bear to provide a cleaner, quieter and, above all, healthier environment in the UK."

New EPUK website

Environmental Protection UK has a new website.

Close on the heels of its rebranding from NSCA, EPUK's new website can be found on www.environmental-protection.org.uk.

HEALTH EFFECTS

HYENA finds blood pressure link

A huge multi national study has shown that a 10db increase in long term exposure to noise increases the risk of hypertension (high blood pressure).

The Hyena (*Hypertension and Exposure to Noise near Airports*) study looked at a number of European airports and roads including Heathrow and is one of the largest dealing with noise and health effects (*Noise Bulletin November 2007 p4*). High blood pressure is a direct cause of heart disease so is an important impact.

The Hyena study measured blood pressure and collected data on health, socio-economic and life-style factors, including diet and physical activity, via questionnaire at home visits for 4,861 people aged 45 to 70, who had lived at least five years near any of six major European

airports (including Heathrow, Berlin and Amsterdam). Noise exposure was assessed using detailed models with a resolution of 1dB (5dB for UK road noise), and a resolution of 250 x 250m for aircraft and 10 x 10m for road noise.

Researchers, who included a team from London's Imperial College, concluded: "The HYENA study is the first to investigate the impact on blood pressure of exposure to noise from aircraft and road traffic near airports. We found significant exposure-response relationships between night-time aircraft as well as average daily road traffic noise exposure and risk of hypertension after adjustment for major confounders. There were no significant differences in effect between exposure to noise from aircraft and road traffic

although the odds ratio for night-time aircraft noise was somewhat higher than the odds ratio for road traffic noise.

"For night-time aircraft noise, a 10dB increase in exposure was associated with an odds ratio of 1.14 (14% increase in risk). The exposure-response relationships were similar for road traffic noise and stronger for men with an odds ratio of 1.54 (54% increase in risk). in the highest exposure category (>65dB)."

The paper can be viewed via the Environmental Health Perspectives website www.ehponline.org/members/2007/10775/10775.pdf

● World Health Organisation night noise guidelines, (*NB October pl*) which were to have been released last year, are not now expected to be released until later in Spring.

NUISANCE

St Albans bar fight: (continued from page one)

Legal expert with Faber Maunsell Dani Fiumicelli told *Noise Bulletin*:

"There is relatively little case law on the best practical means defence and any further examination and clarification of this area of statutory nuisance law will be helpful.

"The rationale in limiting the scope of the Licensing Act 2003 to public nuisance only, was that there is other legislation available to deal with noise nuisances from licensed premises that affect only individual or small numbers of households ie. the EPA90. But

as shown in this case, the other legislation can have its own limits that means not all nuisances will be abated.

"This is one of many cases that have shown it is sensible that nuisance legislation should not be treated as a 'fairy godmother' that can abate all nuisances at the wave of a wand without there being costs, sometimes high, both financially and emotionally to one or both parties.

"Instead, the type of noise conflict highlighted by this case is clearly better dealt with proactively through the

planning system ie. either don't allow the garden to be used for drinking or houses to be built nearby, unless either or both incorporate appropriate mitigation measures. This reinforces the need for well developed planning policies at national and local level, with clear and comprehensive technical guidance on interpretation and integration with other planning objectives from central Government and the devolved administrations, and robust commitment to implementation by local planning authorities."

IMPACT ASSESSMENT

Costs outlined

The European Commission has produced a 300 page report setting out the external environmental costs of transport, including noise.

The handbook is intended to inform forthcoming European policy to establish fair costs for all modes of transport. Findings of the handbook have been subjected to peer review .

● The costing document can be viewed on http://ec.europa.eu/transport/road/policy/index_en.htm

TRANSPORT COSTS (€cents/vkm)

| | Time of day | Urban | Suburban | Rural |
|------------------------|-------------|--------|----------|-------|
| Car | Day | 0.76 | 0.12 | 0.01 |
| | Night | 1.39 | 0.22 | 0.03 |
| Motorcycle | Day | 1.53 | 0.24 | 0.03 |
| | Night | 2.78 | 0.44 | 0.05 |
| Bus | Day | 3.81 | 0.59 | 0.07 |
| | Night | 6.95 | 1.10 | 0.13 |
| Van | Day | 3.81 | 0.59 | 0.07 |
| | Night | 6.95 | 1.10 | 0.13 |
| Truck | Day | 7.01 | 1.10 | 0.13 |
| | Night | 12.78 | 2.00 | 0.23 |
| Passenger train | Day | 23.65 | 20.61 | 2.57 |
| | Night | 77.99 | 34.40 | 4.29 |
| Goods train | Day | 41.93 | 40.06 | 5.00 |
| | Night | 171.06 | 67.71 | 8.45 |

MAPPING

N. Ireland gets mapped (continued from p1)

Environmental Noise Directive.

DoE says: “The maps will be used by ‘competent authorities’, including airports, public transport companies and government departments, to draw up action plans by July 2008. The DoE will be working closely with the competent authorities to help them to develop their action plans to reduce excessive noise and to protect quiet areas.”

The competent authorities responsible for producing the maps are the Department of the Environment, Department for Regional Development, Northern Ireland Transport Holding Company, Belfast International Airport and George Best Belfast City Airport.

As required by the environmental noise directive, in this first round maps have been produced for major roads which have more than six million vehicles a year, major railways which have more than 60,000 trains a year, major airports with more than 50,000 air traffic movements a year and transport sources and industry in agglomerations.

For the second round of mapping in 2012, in addition to re-mapping the areas covered in the first round, roads having more than 3 million vehicles a year and railways with more than 30,000 trains a year are to be mapped. All agglomerations with a population of over 100,000 will also be mapped.

Population exposure figures have been calculated by firstly assigning census data to buildings in the mapped area (not by actual number of people living inside a single dwelling within a communal building, for example, but by statistically spreading the number of people across all dwellings in the building). A count is then made of the number of people falling in each noise band calculated.

The numbers are surprisingly low and will give some comfort to those who are concerned that publishing noise maps will cause public concern. EPUK is considering providing guidance on how to best present noise maps to avoid unduly worrying the public.

Isoniq elsewhere

Isoniq is working in Wales and Ireland, as well as in Northern Ireland (see left).

The Irish Environmental Protection Agency (EPA) is using consultant Isoniq to produce noise maps for the country. Isoniq will work with AWN Consulting of Dublin and UK’s Bureau Veritas.

The scope of the project includes a review of existing data available for use in noise mapping, preparation of a ‘best practice’ guidance document tailored for the Irish situation, ongoing advice to the EPA in relation to the implementation of the ‘best practice’ document and clarification of any issues highlighted by the noise mapping bodies, advice on the reporting requirements under the Directive, and skills transfer to relevant EPA staff.

Meanwhile the Welsh Assembly Government has commissioned noise maps for Wales from a team led by Isoniq and including Hepworth Acoustics and Bureau Veritas UK. Welsh maps are due within a week or two.

NORTHERN IRELAND POPULATION EXPOSURE TO NOISE

| Metric | dB band | Belfast Agglomeration | | | | | All Northern Ireland | |
|--------------------|---------|-----------------------|----------|----------|----------|------------|----------------------|-----------|
| | | Roads | Airports | Industry | Railways | Consolid'd | Airports | Roads |
| L _{den} | <55 | 417,800 | 574,000 | 575,500 | 570,700 | 405,600 | 1,674,600 | 1,610,200 |
| | 55-59 | 55,000 | 2,300 | 500 | 2,700 | 63,900 | 500 | 31,000 |
| | 60-64 | 37,200 | 0 | 100 | 2,000 | 39,300 | 100 | 15,400 |
| | 65-69 | 43,200 | 0 | 0 | 800 | 43,900 | 0 | 10,600 |
| | 70-74 | 21,900 | 0 | 100 | 100 | 22,300 | 0 | 6,700 |
| | >=75 | 1,200 | 0 | 100 | 0 | 1,300 | 0 | 1,300 |
| L _{night} | <50 | 464,000 | 576,300 | 575,900 | 573,200 | 460,400 | 1,675,100 | 1,633,400 |
| | 50-54 | 38,900 | 0 | 300 | 2,100 | 41,200 | 100 | 18,500 |
| | 55-59 | 42,100 | 0 | 100 | 800 | 43,100 | 0 | 12,100 |
| | 60-64 | 28,200 | 0 | 0 | 200 | 28,500 | 0 | 8,800 |
| | 65-69 | 3,000 | 0 | 0 | 0 | 3,000 | 0 | 2,200 |
| | >=70 | 100 | 0 | 0 | 0 | 100 | 0 | 200 |

Contours released for English airports

England’s busiest airports have been mapped. Results have been posted on Defra’s website.

While Scotland and Northern Ireland have already provided consolidated (road, rail, air and industrial) maps, England is struggling in a piecemeal fashion. Road maps were published for London three years ago, aircraft noise maps have now been completed with Defra hoping to publish more within the next few weeks. The deadline for completing these maps was last year.

Maps are available for the following airports: Birmingham, Blackpool, Bournemouth, Bristol, Coventry, Leeds Bradford, Liverpool John Lennon, City, Gatwick, Heathrow, Luton,

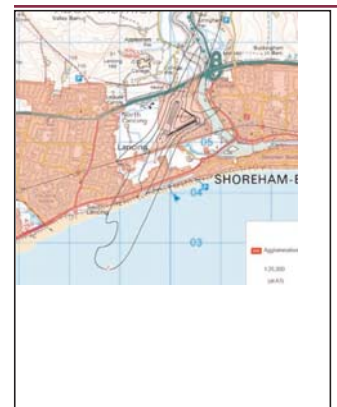
Stansted, Manchester, Newcastle, East Midlands, Shoreham, Southampton and Southend.

Defra notes that it has found that the L_{den} indicator tends to produce larger contours than the corresponding LA_{eq,16hr} indicator. “This is because the noise which occurs in the evening (1900 – 2300) and at night (2300 – 0700) attracts an artificial weighting of 5dB and 10 dB added respectively before being combined to produce the L_{den}.”

“Given the difference in parameters, it is not possible to draw any meaningful conclusions between the Environmental Noise Directive maps and the annual summer contours. This will need to

await the second tranche of noise mapping in 2012.”

The Aviation Environment Federation welcomed publication of the maps adding: “The Environmental Noise Directive methodology gives a more accurate picture of the areas affected by noise than the current UK measure of noise on an average summer’s day (0700 – 2300). It is important to note, however, that while the directive requires member states to tackle high noise areas, it does not specify what constitutes a high noise area or any appropriate measures, leaving this to the discretion of member states. The AEF fears that this will result in no action being taken, with the government continuing to



Contours for Shoreham Airport

refrain from using its powers in favour of local resolutions.

“For areas identified as having high noise levels, we believe government should use its powers to impose limits on air traffic movements – as it does for night noise at Heathrow, Gatwick and Stansted in London. In addition, government needs to be setting targets to underpin any local noise amelioration schemes agreed between operators and communities.

● The maps can be viewed on www.defra.gov.uk/environment/noise/ambient.htm

Deliveries on the quiet

Trials at a sensitive London location have shown that night-time deliveries to supermarkets need not wake the neighbours. Lisa Russell reports.

Night-time deliveries to urban supermarkets usually offer plenty of ways of disturbing the neighbours. If the refrigeration unit doesn't wake you, then there's still a good chance that reversing alarms, clanging trolleys, squeaking gates, raucous conversations and booming radios will drag you from sleep.

But a recent trial has shown that these noises can be eliminated. Even people who were previously hostile to the idea of night-time deliveries are now enthusiastic about what can be achieved when everyone works together to keep the noise down. The success of the approach was acknowledged in the Noise Abatement Society's (NAS) recent John Connell awards, where Wandsworth London Borough, Doncaster MBC and Sainsbury's took the innovation prize.

They were congratulated for helping to pioneer the first NAS-monitored 'silent approach' trials for quiet night time deliveries. NAS believes this has been the toughest, yet most productive, night time trial undertaken and that it has shown that most problems can be solved, says director Peter Wakeham. "We are convinced this project has set a template for others to follow and has shown that co-operation is key to solving such complex noise issues."

Trials are still ongoing at Doncaster, which had been keen to be involved as it had already worked successfully with NAS on earlier projects. Wandsworth has now reported on its completed trial and officers are positive about the effects of range of measures involving both quieter equipment and behaviour. "If these good practices can be adopted by everybody doing night time deliveries, then there will be an improvement even where deliveries are currently permitted," says Wandsworth Council's Jill Phillips.

Reductions in noise, pollution and operational costs were achieved resulting in significant commercial benefits for Sainsbury's, without impacting on local residents, sums up her colleague senior environmental services officer John Sibson.

"Sainsbury's has bent over backwards to make this, we feel, one of the toughest and best trials ever done," says Wakeham. "We didn't give an inch and neither did Wandsworth Council. It's set the precedent now. Every store is individual, but what we've proven is that the problem can be overcome at one of the most sensitive stores in London."

The NAS was keen to see a trial that

would test a range of measures, both its own and those developed by others. The Freight Transport Association had drawn up a delivery toolkit with advice on measures that should be taken in order to minimise or remove the impact of any increase in night operations.

Work in The Netherlands has also resulted in the development of technology and standards to enable evening and night time deliveries under a government-sponsored programme. The PIEK initiative supports a series of practical projects to tackle delivery noise, including the development of quieter equipment. Robert Goevaers is project leader for the programme and adviser within SenterNovem, an agency of Dutch Ministry of Economic Affairs. He has had discussions with those involved in the UK trials, sharing Dutch experience and offering advice.

Stores clearly benefit commercially from the quicker deliveries at night-time, with savings both in driver hours and in operational costs. There are however other compelling arguments in favour of taking some of the day-time traffic off the roads and it is important to explain these to the public, says Goevaers.

The consumer also gains from night-time deliveries, says Sainsbury's Wandsworth store manager Steve Potts. "Now we can accept fresh deliveries overnight instead of having to wait for the vehicle to come in and be unloaded before we can fill the shop up." Previously there might have been five or six vehicles trying to get in at 6am, which could mean the shelves weren't fully filled until 11am.

"One of the other things that is obviously key on our agendas is the environment," says Sainsbury's environment manager for supply chain Morag Robertson. "Night-times are inevitably less congested, which means that our vehicles can arrive at their most efficient speed, with less stopping and starting – they are using less fuel, there are less emissions." Even the small savings in CO₂ emissions for one store would be substantial when multiplied up across the country, she points out. The lorries also make less contribution to congestion, as well as being less affected by it. "It's claimed – and I wouldn't say there is any scientific analysis – that more deliveries at night equal less accidents," she says. This is also seen as an important factor by the Dutch public, particularly as there are so many bicycles in there.

Wandsworth's Phillips says that her initial reaction to the proposed trial had been "no way", because of the effect on residents. But she was convinced by the rigorous approach put forward. "What we are trying to do with 'silent approach' is to set up a gold standard."

Considerable interest in the initiative means that the participants are scheduled to speak at various meetings in coming weeks, including a forum scheduled to take place on 15 April at the commercial vehicle show at the NEC in Birmingham (details from NAS).

Those involved are also spreading the word through presentations and meetings with other organisations including councils and freight quality partnerships. "I want to put the message out across London and across the UK so that everybody is buying into the concept and singing from the same hymn sheet," says Phillips.

The UK Noise Association has concerns about the possibility of night time deliveries being allowed elsewhere with fewer safeguards, says national coordinator Val Weedon. "We would err on the side of caution," she adds, recommending sanctions if the agreed measures aren't followed.

"The NAS was always against night time delivery," says Wakeham. But he can pinpoint the moment when he thought there might be scope for quieter deliveries. He was driving at night in central London when "whispering down the road – and I do mean whispering – was a huge superstore lorry." He realised that night time deliveries didn't have to be noisy and started to look into it. A particular problem was found to be reversing alarms and NAS now has a scheme to encourage the take-up of broadband alarms to address this.

"Everyone who uses the roads during normal daylight hours knows only too well the delays and frustrations caused by the overload of traffic in many areas," says FTA head of urban access Stephen Kelly. "A missed appointment can be re-scheduled but a missed delivery costs money for everyone involved – retailer, supplier, logistics company and ultimately, the consumer." FTA estimates that over 40% of supermarkets throughout the UK are the subject of some form of curfew which inhibits deliveries overnight.

About 30% of Sainsbury's big stores have some kind of delivery restriction on them, whether as a consequence of complaints, or as part of planning regulations, says Robertson. The less time available to deliver

to a store, the more that has to be done in a short time. "We have to have more resources available to us, and in our downtime those resources are just sitting around. We would rather have flatter operations, instead of having sudden peaks at 7am when all these restrictions are lifted." There is no intention to shift all deliveries to the night, she stresses. A large store might get 10 deliveries a day. "We wouldn't want to put those 10 deliveries into the night time, but maybe three to flatten the peak."

Justified complaints in 1999 from local residents had led to Sainsbury's formally agreeing to stop deliveries to the store in Garratt Lane, Wandsworth from 12 midnight to 6am. It was the NAS, rather than Sainsbury's, that applied to the council for permission to do the recent trial. "They were tough. They were adamant that they were not going to have their people disturbed," says Wakeham.

Initial discussions led to the council's agreement in principle. The additional deliveries proposed for each night consisted of two articulated lorries, one arriving at 1am and one at 3.30am. Assessments were made of the procedures, routing, vehicles and in-store equipment. Improvements to equipment, facilities and practices were identified and agreed, as were the noise measurements and air quality data that would be required.

The approach was to introduce sound-deadening for every aspect of the operation, explains Sainsbury's Wandsworth store manager Steve Potts. "Before we started the trial, we identified all the things that we

could do," he says. "They were common-sense things, like greasing the gates." Others included the use of sound-deadening materials on the loading bay and stopping anyone from making loud noises in the yard. "We agreed that we wouldn't move anything in the yard at night." Everything was looked at, he says. For instance, it turned out that radios in the store were louder than had been realised, and so people were asked to turn the volume down.

Many of the most effective measures were surprisingly simple (eg. the gate greasing). One thing Phillips highlights was the use of curtaining to shroud the sides of the lorries at the loading bays, as this achieved a 10dB reduction. Procedures and practices are also important. "The crucial thing is the human element and that is where you have to have really tip-top management who are hands-on and get their colleagues to buy into the whole project," says Phillips.

A key decision was to save until daytime the returns of empty roll cages and cardboard for recycling. Avoiding returning them at night kept the night-time operations quicker, and kept the noise down. Another key factor was that the lorries would stop to turn their cooling units off before entering the city to minimise noise down on the approach to the store.

Vitaly important to the council was reassurance that any complaints would be dealt with immediately. There were prominently-positioned signs with 24-hour contact details. The phone service was provided by the Noise Abatement Society, which had a direct contact to the store and a promise that any problem would be resolved straightaway.

Spot checks were carried out to ensure compliance. The hardest element to control was the human factor, found Sibson. Errors could occasionally be made. "There was an interesting increase in noise levels on one night which has been ascribed to the atypical and noisier delivery vehicles being used on that occasion," he says.

"Local residents were not informed of the trial so that complaints would be unprompted," he adds. "No complaints have been received from our residents, nor have they even enquired about deliveries occurring much later than had previously been agreed."

Close co-operation between the council and each business is essential to ensure that effective noise minimisation is achieved, advises the Wandsworth team.

Phillips points out that stores won't necessarily make their initial approach the noise side of the local authority and so good liaison is

necessary with other departments. "They might go to the transport planners because it's seen as a planning issue or a transport issue, whereas the noise team really need to be involved," she says. It will always be essential to assess each proposed location on a case-by-case basis, and some locations may never be suitable particularly the small shops directly underneath flats.

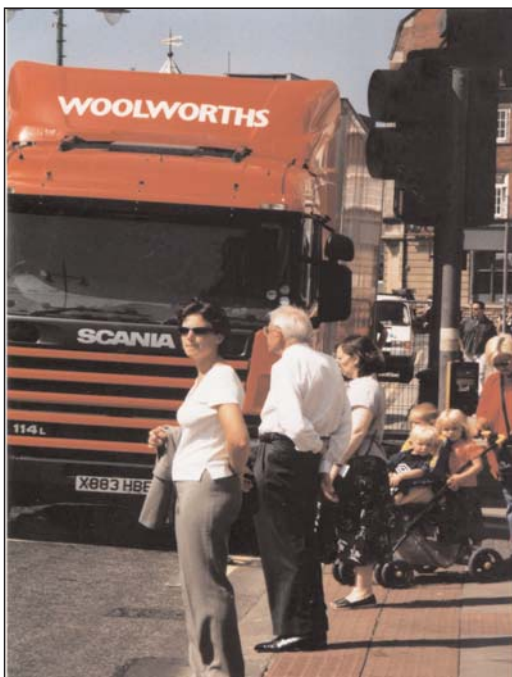
Sainsbury's has recently received about 25 lorries with low-noise fridges for trial. The reductions in noise are incredible, says Robertson. "If they prove a success, they will help push this agenda."

Considerable advances have been made over recent years in terms of vehicle technology, says Kelly. When curfews were originally imposed, the noise was considerable. "However, significant strides have been taken by industry, notably the vehicle manufacturers."

In The Netherlands, PIEK has supported the development of quiet equipment. Work there continues and almost all supermarket chains are now convinced that this is the way forward, says Goevaers. "Over the last two years we have seen a dramatic increase in traffic jams – the trucks are losing so much time getting to the supermarkets." This has proved a tipping point for many, with five major supermarket chains investing in equipment such as quieter refrigeration units, tail lifts, floor surfacing and reversing alarms. Trials were carried out last year and a report is nearing completion for wide distribution.

Checklists have also been developed to help decide whether a particular site is suitable, covering everything from the types of residents to the flooring of the storage area. There are also sections on modifications that might be needed to the truck or location, or to the behaviour of those driving or unloading.

Plans are being made for the PIEK and NAS standards to be used for transport activities within the Olympic village in London in 2012, says Goevaers. PIEK has also been working with authorities in Ireland and, subject to EU funding, has a project planned to share experience with other European cities including Stockholm, Paris, Barcelona and Warsaw. In turn, The Netherlands has learnt from the UK trial he says. "If we share the knowledge then everyone benefits."



Quiet night deliveries could reduce daytime trips

Weblinks

www.wandsworth.gov.uk
www.doncaster.gov.uk
www.noiseabatementandsociety.com
www.j-sainsbury.co.uk
www.piek.org
www.fta.org.uk
www.ukna.org.uk

Microgeneration: councils talk

EPUK organised a conference to swap experiences of environmental benefits – and downsides – of domestic turbines and heat pumps.
Lis Stedman reports

An Environmental Protection UK (formerly NSCA) meeting towards the end of last year focused on managing the impacts of microgeneration and developing renewables.

EPUK chief executive Philip Mulligan opened the event by telling the audience at Manchester's Museum of Science and Industry that it was "fitting that we meet in a shrine to the first industrial revolution when we are on the cusp of another".

The event covered other environmental impacts beside noise, but was nevertheless a fascinating glimpse of the promise and problems ahead in the dash for green energy.

Will French of the Royal Town Planning Institute led a policy and planning update – the first of several to note that "planners are often inconsistent" about the issue. The Householder Development Consents Review was mooted, he said, as part of the then-ODPM's five year plan, with the aim of reducing red tape while protecting amenity, and making it easier for non-controversial development to go through.

The review took an impact approach to the questions it had to answer, such as whether the existing system was proportionate to the need to safeguard the public interest, and whether the burdens on business and regulation system could be reduced by redefining the boundaries of control. This defines impact and regulation in tiers, from level one, developments that do not affect anyone beyond the next property and should go ahead without reference, to level four, which affect things beyond the immediate street scene, on which full statutory consultation would be carried out.

Entec was commissioned to look at microgeneration for households and recommend which types would fall into the level one category, or PD (permitted development). The consultancy reported over a year ago after working in close collaboration with the microgeneration industry and councils.

Its conclusion was that solar power had the most short-term potential, with heat pumps the area that gave significant concern because of the potential impact of noise from heavy duty compressors that drive the pumps (but mainly relating to air source units). Domestic wind turbines raised more concerns, including noise and vibration. He added: "The important question was how much actual potential they create, which is not a relevant question

for planners. It does raise quite a lot of issues."

Government began consultation on the proposals in early 2006 (*Noise Bulletin July 2006 p3*). "The most important effect was noise and whether planners can control it and be able to put limits on any equipment that might be installed," French noted. "It is clear to me that it is not simply a problem related to domestic turbines and other systems such as heat pumps. There is concern about whether planning authorities have got the expertise and experience to intervene when permitted developments exceed permitted levels."

Entec's proposals suggest that ground and air source heat pumps will count as permitted development, but that restrictions will be attached to wind turbines including height, blade diameter and maximum internal noise at neighbouring properties of 30dB, with external noise limits of 40dB (and these have subsequently been given the amber light in the recent Planning Bill announcement (*Noise Bulletin Dec p2*)). He observed: "It is vital that we do not just end up with another legally-drafted document on permitted development rights. It is also vital that government takes the lead and produces good policy, design guidance and practical information." It is important that government makes it easier to understand what permitted development rights are, and what good practice is, he added.

Jonah Anthony, policy director of the Micropower Council and Alex Murley, small systems manager at the British Wind Energy Association followed with an industry perspective, with Anthony beginning by stating that "there is no one solution – in future every house will have a right solution – right house, right position".

The pair spoke of the industry being "passionate about getting involved and engaging with the issues on a fair basis". Anthony noted: "One of the key messages to planners is why has no one come to talk to us about this?"

He may not be aware of an underswell of dissatisfaction from local authority environmental health officers who have been trying to get useable noise data from wind turbines. Many have been asking manufacturers who have not come up with the goods.

Murley again pointed to planning inconsistencies, and noted that wind turbines were not being put in the right places: "Forecast winds of five metres per second annual average is the minimum

level. If it's below that you have to ask the question if it is viable."

On noise, he said BWEA is working with DCLG and Defra and that the typical noise level would be 40dB outside and 30dB inside, 5dB below WHO guideline levels. Vibration "is something that should be considered", he added, stressing the importance of carrying out the installation correctly. Certification, he said, was the answer and that it would be possible to "run the potential cowboys out of the business if we had good general guidelines that could be upheld through a certification scheme". He urged support of the BWEA/BERR certification schemes as an answer.

In the question session that followed, one participant observed that though it was laudable that the decibel limits were within WHO guidelines, given that many domestic turbines will be in rural areas, where the background noise levels are much lower, 30dB inside could be an increase on existing levels. The rather bullish response was that the pair "didn't think it was right that people should have different expectations of noise in rural areas than in cities".

The sharp intake of breath from attending environmental health officers was audible, and there was much muttering over the break-time buns along the lines that reality was a bit different. Another concern voiced was that a system that meets the noise and vibration standards when new might well not a few years down the line as performance falls off. What then? "In ten years it could be making an awful noise," the questioner observed. The pair pointed out that turbines come with 25-year warranties from installers, which are insurance backed.

The audience felt sceptical, with one attendee observing that the main difficulty was getting noise data out of manufacturers, "which makes it impossible to make a formal noise assessment". People also voiced concerns about 'regulatory clutter' – the potential for overlapping regimes producing complex and conflicting situations.

Dr Andy Moorhouse of the University of Salford took over after the break with a look at research into wind farm noise, which had looked at amplitude modulation of aerodynamic noise, which was seen as a possible factor in complaints. This interesting and some would say controversial work has been reported before (*Noise Bulletin Aug 2006 p1*) with the

general message being that suspected amplitude modulation noise is rarely found and that complaint statistics can be skewed by multiple complaints from one source. Unfortunately, significant differences between wind farms and domestic wind turbines make these findings inapplicable to domestic turbines.

Later, Matthew Rhodes, the managing director of renewables specialist Encraft, looked at the Warwick wind trials. This has been the largest trial of domestic wind turbines so far in the UK.

The project is a work in progress – Rhodes noted that “you have to look at sites for at least a year before you get a meaningful evaluation for the technology”. There are 24 sites in all, focusing on ten turbines in Warwick with others at Lizard Point, Cornwall and Aberdeenshire. Five manufacturers’ equipment is being trialled, with the largest turbine being the 1.5kW Swift and the smallest the 400W Stealth. Almost all are independently mounted. The project aims to gauge community reaction, both positive and negative, and whether there are any barriers to the technology developing.

Rhodes noted: “It does make you more aware that energy is generated, it is not remote and distant. Observations so far include the fact that 17 planning applications provoked eight objections, with seven focused on one site. All 17 ultimately obtained planning permission, though two went to committee stage. The objections were “not really related to the specific turbine” Rhodes explained, being mostly along the “blots on the landscape” line. Surveys at three locations have produced positive feedback, with 80% in favour or very much in favour, and 10% neutral to the turbines.

Perhaps a hint of the shape of fights to come, he slammed one unnamed planning official who insisted that an “excessively onerous” process took place despite the site in question being an industrial complex by a municipal waste dump with no domestic dwellings within 400m, and moreover shielded by trees. Despite this, the officer “felt this was the equivalent to a wind farm and insisted on a full impact assessment – a 30-plus page assessment. It was really rather ridiculous. It shouldn’t happen.”

Another perhaps inevitable early finding has been of massive variations between the theoretical and measured energy produced. The best site produced over 3000kWh over 70% of the year on a coastal hill, but most sites produced less than 1000kWh, with the bulk lower and some a paltry 500kWh. The worst site produced 56 times less than the best site, which gives a good idea of the scale of the potential difference.

Turbulence is the culprit, Rhodes noted –

there is no such thing as a constant flow of wind and the turbine therefore moves frequently to seek the wind. “It is very, very site specific and very difficult to scientifically analyse, very expensive,” he added.

Unfortunately the findings, which will not be complete for another year, do not cover noise – there is no noise monitoring equipment on the site, though the public reaction element may give an indication of any nuisance. As such, he explained that just four out of the 24 sites had attracted complaints about noise to date, one coming after a turbine developed a fault. All of the complaints, he added, related to background noise and may be due to a combination of very high winds causing the turbines to turn extremely fast, and low background noise levels.

The questions raised some interesting

“ In ten years it could be making an awful noise ”

points, including the point at which the number of turbines is so great that it should be deemed a wind farm. An attendee noted that one Scottish council had planned 40 turbines on one of its buildings “until it was told the building would end up two miles away”. The complexity of the noise issue was stressed, and that the IoA’s response was not intended to be negative, just an indication of exactly this fact. It was also confirmed that a system of certified installers is being looked into, though this has not got so far as to merit being called a proposal.

Jonathan Bates of contractor Photon Energy then took an industry perspective of building-mounted wind turbines, again stressing that the “better part” of the industry is keen to ensure it is accredited. His business does not deal with micro, or ‘ornamental’ turbines, he noted (make of that what you will), but heftier ones of between 2.5kW and 6kW output. These, of course, are fitted to public or commercial buildings rather than homes, though some of the same issues pertain.

Like a previous speaker he stressed that there is “no alternative to putting an anemometer up” to check the reality of the wind situation on the building in question. Issues, he noted, include noise, vibration and flicker. He looked at two case studies, one in Plymouth on the Innovations Centre city college, and the other for a London Borough of Southwark building.

At the first site, flicker through a skylight has proved a major issue, as has turbulence. The second site plans a comparative test of

two different turbines, the second being due on site by the end of 2007.

David Edmondson, the development services manager of Carrick District Council in Cornwall, then looked at microgeneration and planning case studies.

He spoke of a “real push” in the county to encourage and indeed insist on renewables where possible. Again, he warned of “uncertainty and inconsistency of implementation and lack of clarity” in permitted development rights, and praised the revised permitted development scheme as “getting clarity” though he noted that “I feel there is still scope for misinterpretation”.

One concern Edmondson outlined is that there is one figure for noise for rural and urban areas, and that no account is taken of cumulative impact. “There are questions of performance and cost. Planning permission is not a fundamental factor, but planners will get the blame,” he said.

He noted that the council was seeing a “lot” of ground source heat pumps (which have less potential for noise nuisance than air source heat pumps), with a number of micro-wind projects also granted permission. These have been more on the commercial side rather than residential, he noted, with many schools on the list for both standalone and roof-mounted turbines.

It is important, he stressed, to attach the right conditions to the consent, and that the noise created is considered against the relative background noise levels (wind industry take note) and how it will affect neighbouring properties. Proper maintenance and ensuring that the turbine complies with stipulated noise levels can be included in the conditions, he pointed out, as can removal on cessation of use.

Cornwall, with its excellent wind speeds, is looking to become a ‘green peninsula’ and raise its profile as an early adopter of renewable energy.

Philip Mulligan summed the day up as “very informative” and indeed it was, though it is clear that there are, from the local authority point of view, still many unresolved issues and murky corners both in what is known about turbines, and the legislation that pertains to them. The knotty problem remains of whether the good that they potentially achieve, in the right situation, may be substantially offset by other negative factors such as noise and vibration.

One suspects that it will only be when these technologies are in far more common use that the true picture will emerge – one clear message from the day was that there are still many unknowns, both in terms of performance and effects, and that the controversy is far from over.

Pseuds corner

Here's some silly research.

We're all in favour of quiet areas, and even think the concept of soundscapes is good (ie trying to turn nasty noise into nice noise). But there are limits, which seemed to have been surpassed in the ESRC research programme titled *Rethinking the urban experience: the sensory production of place*.

These research councils seem to have too much money if they can hold conferences such as *Senses and the rhythms and temporalities of the city*. This seeks to "explore how the sensual experience of the city is shaped by rhythm and temporality (presentations explore the rhythms and sensations of bicycle and bus travel, the sensual rhythms of specific locales, the rhythms of urban advertising and attempts to install slower rhythms in place)."

Or what about this workshop: *Senses in transition*. "This looks at the various ways in which technologies and modes of moving through the city produce particular sensual experiences. The seminar includes presentations which focus on mobile soundscapes, rail travel, and the distinct mobilities of the

amusement park."

And there's more. £200,000 is being spent on what happens when people hear birdsong. Researchers at Aberdeen University will spend two years listening to birds to find out how their songs, calls and cries become a part of people's lives. This time the money is coming from the Arts and Humanities Research Council

If there's so much money knocking around to look at noise, then why can't Defra be funded to pick off some of the elderly, festering items on its very long noise wish list?

Train horns silenced

A series of 'quiet zones' are being established in the US to reduce nuisance from train horns. UK residents have similar problems with unnecessarily loud new trains.

US railroads tend to have 'at grade' crossings without gates – trains must sound their horns to reduce the risk of accidents, but there are increasing numbers of complaints about the nuisance.

Costs of installing gates and other infrastructure to allow a 'quiet zone' to be designated to avoid the need to sound

the horn are high – up to \$7m per crossing. One study has suggested that this could be recovered by issuing a bond, with the 1,000 properties nearest the crossing paying up to \$725 a year for 20 years.

With one resident commenting that this would be less than his meds for high blood pressure caused by the horns, we suspect this will prove an interesting case study for economists keen to value the impact of noise.

Boeing's jumbo porkie

Boeing has been censured by the Advertising Standards Authority for claiming that its new 787 Dreamliner would be 60% quieter.

It justified its complaint based on its noise footprint being cut by 60%. But the ASA agreed that the impression was that a normal person would find the plane 60% quieter – when in fact it wasn't.

Of course this misrepresentation has some similarities with aviation body ICAO's presentation of its latest 'chapter' noise standards. It totted up the improvements at three locations and quoted the total as the saving, which is rather disingenuous.

NOISE EVENTS 2008

2008:

8th February

IMPROVEMENT OF THE MANAGEMENT OF HELICOPTER NOISE

IoA meeting to be held in Salford, Linda Canty, IoA 01727 848195

20th February

HEALTH EFFECTS OF ENVIRONMENTAL NOISE AND ACTION PLANNING

Scottish division of EPUK meeting, and Annual General Meeting, to be held in Glasgow. Email Clare Carruthers, EPUK clare.carruthers@environmental-protection.org.uk

28th February

WINDFARM NOISE

IoA meeting to be held in Armagh, Linda Canty, IoA 01727 848195

5th March

NOISE NUISANCE

Institute of Acoustics London Branch meeting to be held at the Royal Society, London, contact Linda Canty, IoA 01727 848195

12th March

TRANSPORTATION NOISE UPDATE

IoA environmental noise group meeting to be held at the Arden Hotel, Birmingham, contact Linda Canty, IoA 01727 848195

14th March

NOISE IN THE CITY

Eurocities working group conference to be held in Amsterdam, more details on website www.noiseinthecity.eu

18-19th March

NOISE SPRING WORKSHOP

EPUK residential workshop to be held at Woodside, Warwickshire. Contact EPUK, Lucy Salter 01273 878770

10-11th April

WIDENING HORIZONS IN ACOUSTICS RESEARCH

IoA spring conference to be held at Reading University, contact Linda Canty, IoA 01727 848195

21-25th July

9th INTERNATIONAL CONGRESS ON NOISE AS A PUBLIC HEALTH PROBLEM

The 9th International congress on noise as a public health problem, five yearly conference to be held in Connecticut. www.icben.org

30th June-4th July

ACOUSTICS '08 PARIS INCORPORATING EUONOISE

155th Acoustical Society of America Meeting – 5th Forum Acousticum (EAA) - 9th Congrès Français d'Acoustique to be held in Paris. Website www.acoustics08-paris.org

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