



# the London road traffic noise map

The London Road Traffic Noise Map is just one element of the Government's much wider national ambient noise strategy. It will provide information on the levels of road traffic noise across the whole of the Greater London Authority's area. Other types of noise will be covered by projects that are being planned or progressed at present.

Although road traffic noise is only one type of noise that affects people, it is a concern for more Londoners than any other individual source of noise. In the London Household Survey undertaken by the GLA in 2002, 13 % of Londoners said that road traffic noise was a serious problem, compared with 6 % who said that aircraft noise was a serious problem and 4 % who considered that noisy neighbours were a serious problem. At the same time, there is a need to protect existing areas of tranquility from erosion.

Noise maps will help to establish the existing baseline so that we will be able to measure the effectiveness of future initiatives to control noise. They will also let us see in an understandable and visual way how noise spreads from roads and into residential areas. They will help us to see how different types of building layout can affect the spread of noise, the havens of quiet that already exist within the city, and how careful planning could create more of them.

Noise maps will help non-specialists develop a more intuitive feel for how noise behaves, which will allow more people to appreciate the importance of planning and designing against noise and



to let them become involved in the process. They will also give experts the tools to refine designs for maximum benefit at affordable cost.

The London Noise Map is the first detailed noise map of the whole of London and will necessarily be limited by the availability of some types of information. But at the same time, it is forming a focus for gathering together the huge body of information already available into a coherent set of data. The map will be a live resource that can answer many of the questions which will arise as people continue to look for measures to better manage the noise we create.

The pages inside this newsletter explain something of the project's development. One measure of the success of the project will be the extent to which local boroughs and other stakeholders get involved in the project. This means not only supplying data to help us construct the map, but also trying to develop a detailed appreciation of the map and how it can be used.



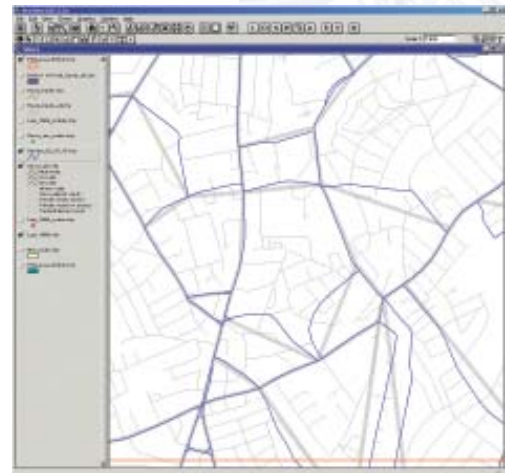
## Producing the Pilot Map

In addition to gathering and preparing the necessary input data, a pilot noise map covering some 9km<sup>2</sup>, mostly in Southwark, has been completed.

### Road Traffic Data

Adequate information on traffic flows is key to the project. The London Atmospheric Emissions Inventory (LAEI) gave us a first approximation of the roads to include, the location of the roads, and details of traffic flows. This is being processed to give the required geographical accuracy, and the traffic flows themselves have been converted into the form needed for noise calculations. Roads have been

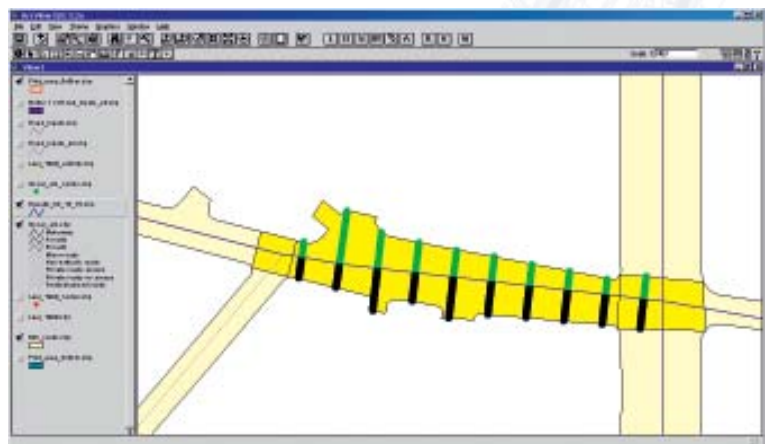
categorized so that the contribution of noise from different parts of the road network can be shown.



Assigning LAEI data to road network

### Road width calculations

We need to know the position of the centre-line of the road and the width of each road segment. A program calculates the road width from the Ordnance Survey MasterMap.



Calculating the road width

## Transfer of the data to the NoiseMap database

NoiseMap 2000 software is being used for this project. One of its strengths is its ability to work with GIS data. Information can be fed directly into NoiseMap 2000, where it is automatically converted into the objects used by the Calculation of Road Traffic Noise (CRTN) methodology.

In addition to the road data, further GIS files provided the locations of buildings, man-made slope features and the position of features that delineate hard and soft ground.

The information is all stored in the NoiseMap database which allows a large number of computers to collaborate on the calculation process. The database is

visible from the Internet and, later in the project, with suitable software it will be possible for stakeholders to see and to use this noise model.

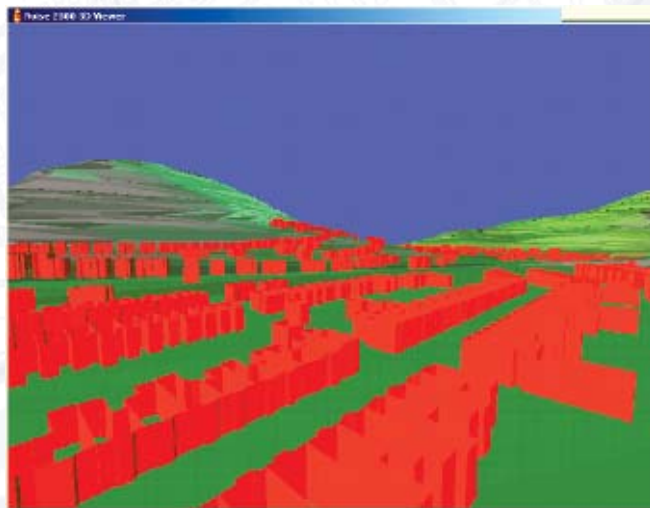


## From 2D to 3D

The Ordnance Survey Profile ground level contour data forms the baseline for the creation of the 3D world inside the NoiseMap software. However it does not supply all the height information required. For the extra level of detail, we are obtaining road and embankment height data from aerial photography.

## Collection of data "on the ground"

It was important to gather local information about non-standard road surfaces and roads that deviated from ground level. Areas of interest were identified from the mapping and by consultation with officers at Southwark council, whose assistance is gratefully acknowledged. These areas were surveyed on foot and the data was added into the NoiseMap model back in the office.



Capturing the 3-D world

## Processing of the buildings data

Apart from purpose-built acoustical screening and the impact of terrain and land-form, the main barriers to noise attenuation in the urban environment are the buildings themselves. Each and every building that potentially has a screening effect must be included in the noise calculations as a "barrier" object. Each building is processed during the calculation step. For this prototype noise map of London all buildings will be modeled with a height of 8m above local ground, although considerable effort has been taken to ensure that actual building heights can be added later. It is a requirement that the model can be updated to reflect any adjustments to the building heights.

## Calculations

The calculation time for the pilot area was approximately 24 hours, using four Pentium III desktop PCs running at about 450 MHz. Each computer shared the calculation load by taking work from a task queue on the database server. This has the advantage of generating the map at an acceptable speed without the need for a super-computer. When the final

maps are produced, we will be able to shorten the calculation time by using faster computers or by setting up more computers to collaborate on the work.

The Pilot has proven that the concepts and methodology work well. However, the experience of producing this pilot area will allow us to refine our approach for

producing the remainder of the map.



# Stakeholder Event

## Friday 27 June 2003

The next Stakeholder Event will be held at City Hall from 9.30 to 12.40 on Friday 27<sup>th</sup> June, followed by a light buffet lunch.

The event will provide feedback on the data supplied by Boroughs and will demonstrate the Pilot Noise Map.

We will also explain how Stakeholders can continue their involvement in the London Noise Map, including how to get the software, how to link into the noise model and how to obtain further training on Noise Mapping. We will be interested to receive the views of Stakeholders on how they might make use of the noise map.

### *The programme will include:*

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#### *Registration and coffee*

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**Feedback to stakeholders** on the data they have provided to the project.

**The Pilot Noise Map:** Input data utilized; Results of the Map; Application of the map, especially in relation to the draft London Ambient Noise Strategy.

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#### *Coffee Break*

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**Continuing Involvement in the Noise Map:** Guided tour of the NoiseMap software; How Boroughs can link into the Noise Map; IT infrastructure requirements; training courses; Feedback from Stakeholders on how they might make use of the noise mapping.

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#### *Light Buffet Lunch*

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For more details on any of the above, or for any queries related to the project, please contact:

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**email: [bill.oates@atkinglobal.com](mailto:bill.oates@atkinglobal.com)**

*If you haven't yet requested your copy of the NoiseMap software, it is not too late to do so! Please call us to discuss eligibility and availability.*



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