

Virtual Environmental Planning system (VEPs)

Visualising Environmental Models in 3D

The Virtual Environmental Planning Project (VEPs) has developed and demonstrated the use of interactive, web-based technology to help people understand planning proposals and share their views about them online.

As part of the VEPs Project, environmental information such as flood or noise models have successfully been uploaded into 3D models allowing people to explore this information in 3D on the web.

Flood Models

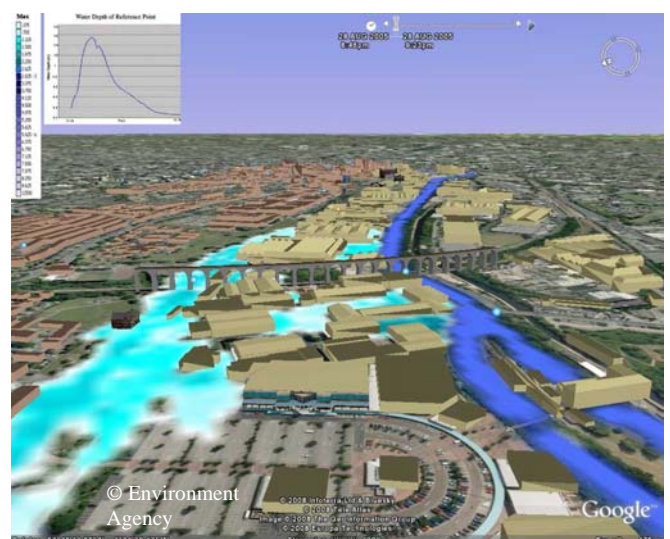
Recent flooding across Europe has highlighted the risks of developing in high flood risk areas. There is a need for proper planning and 'climate change proofing' of new developments to help protect communities.

VEPs has linked 3D city models with environmental models showing historic and potential flood events. These applications aim to help people understand the implications of planning decisions in flood plain areas and to help detailed design of flood defences.



Flood Case Studies

The work has developed visualisations of flood model outputs with 3D buildings and terrain for Urban and coastal scenarios. For example viewing 48-hour flood events in applications such as Google Earth, for use in consultations with local authorities and organisations.



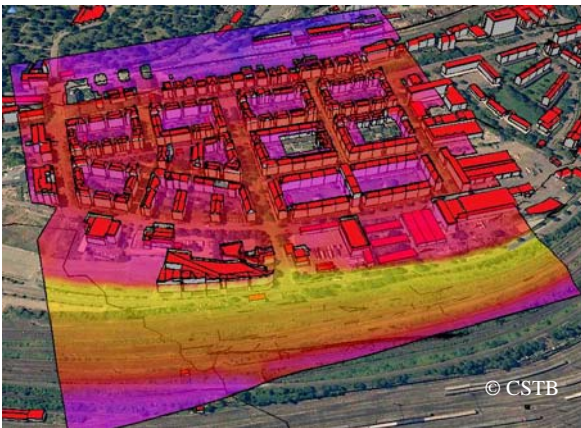
Technical

LiDAR data is used to create the 3D city models and terrain. Current flood models are used to create flood event outlines for visualising in the 3D data. This can be linked to other data such as historical photographs and videos.

Noise Models

Some proposed developments, such as airport expansion or major road development schemes may have noise pollution implications for local communities both during and following the construction phase.

VEPs has linked 3D city models with environmental models showing before and after noise simulation results. These applications aim to help people understand the implications of planning decisions on the local people.



Noise Case Studies

The Rosensteinviertel redevelopment project involves proposals to move all the train lines crossing the centre of Stuttgart underground and it has been estimated that during the construction phase, one truck every forty-five seconds will pass through the residential area to deliver materials to the site. This traffic movement will affect the people living and working in the area.

VEPs has produced 3D noise simulations to help people visualise and understand the noise pollution associated with the construction traffic.

Technical

These simulations are based on: (i) statistical information about predominant weather conditions (wind, humidity), (ii) estimates for road traffic (number of vehicles per hour, average speed, percentage of trucks), (iii) predictions of train traffic (number of trains per day, train types and speed).

MITHRA®, the noise simulation software developed by CSTB, imports the data and computes sound levels on the ground and on the facades of buildings. These simulation results are then processed to be displayed as textured sound maps



Further information

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