At the Euronoise meeting in Prague, three QSIDE papers were presented.
The abstracts are reproduced on the following pages.
Full papers are included on the conference CD.

EURONOISE Prague 2012

On the Definitions of Quiet Façades and Quiet Urban Areas

Wednesday, 9:40 am, Room 7 _____ pp. 1365–1372, Invited

Frits van den Berg
GGD Amsterdam Public Health Service, Amsterdam, The Netherlands

Carlo Schoonebeek, Menno Hillebregt
Environmental & Building Department, City of Amsterdam, the Netherlands

Abstract

The advantages of quiet façades and quiet areas are investigated in the Quiet-side project (QSIDE). The hypothesis is that a quiet façade at one side of a noise exposed dwelling or a quiet area in its neighbourhood will lead to less annoyance from traffic noise present at the noisy side of the dwelling. It is expected that the Qside project will provide more evidence. Quiet façades and quiet areas are mentioned in the Environmental Noise Directive (END) and should or could be part of the action plans to be submitted to the EU.

There is no generally accepted definition for either a quiet façade or a quiet area. In QSIDE several European cities have been asked if and how they solved this. Also, an international team evaluated the END procedures and results, including this same topic. All results show that the perceived quality of a quiet area cannot be assessed by an acoustic indicator value only. Although Lden or Lday can give an indication, other acoustical and non-acoustical aspects may be indispensable. Results show that low or medium sound levels and one or more area quality indicators could characterize a quiet area. The definition for a quiet façade is based on either an absolute low level (usually the accepted noise limit) or a relative low level (lower than at the noise exposed side).

The results of the inventory will be presented as well as an attempt to narrow down definitions (or descriptions).

ISBN 978-80-01-05013-2 ISSN 2226-5147

EURONOISE Prague 2012

Traffic Noise and Annoyance: The Effect of Quiet Facades and Quiet Areas

Monday, 2:20 pm, Room 3 _____ pp. 281–284, Contributed

Yvonne de Kluizenaar, Erik M. Salomons, Sabine A. Janssen
TNO, Department of Urban Environment and Safety, Delft, The Netherlands

Frits van den Berg
Public Health Services (GGD), Municipality of Amsterdam, Amsterdam, The Netherlands

Abstract

Quiet façades and quiet areas may reduce effects of road traffic noise by offering the possibility to avoid the noise to some extent for the inhabitants. To date a limited number of studies have investigated this hypothesis. Further quantification of the effect size will be helpful to enable estimation of a beneficial effect on people.

Within the framework of EU project QSIDE, the effect of quiet facades and quiet areas on the annoyance response is studied in different EU cities, including Amsterdam, the Netherlands. This paper describes the design of the noise exposure assessment for participants of the Amsterdam study, a population-based survey of inhabitants of Amsterdam. The assessment of exposure to road traffic noise, and preliminary results with respect to beneficial effects of quiet side and quiet areas will be presented and discussed. For all addresses in Amsterdam, different indicators of road traffic noise exposure were assessed. Road traffic noise levels were estimated for the most and least exposed facades of all dwellings, and for the neighbourhood of the dwellings, using engineering modeling techniques and area statistics in GIS. The role of other factors such as accessibility to urban green is also explored.

ISBN 978-80-01-05013-2 ISSN 2226-5147

EURONOISE Prague 2012

An Efficient Model for Background Noise Mapping

Monday, 2:00 pm, Room 5 _____ pp. 376–379, Contributed

W.Wei, T. Van Renterghem, D. Botteldooren
Department of Information Technology, Ghent University, Gent, Belgium

M. Hornikx, J. Forssén
Chalmers University of Technology, Applied Acoustics, Sweden

E. Salomons
Institute of Applied Physics, TNO, Delft, the Netherlands

M. Ögren
Department of Environment and Traffic Analysis, VTI, Gothenburg, Sweden

Abstract

It has been shown that inhabitants of dwellings exposed to high noise levels benefit from having access to a quiet side. Therefore the European Environmental Noise Directive allows member states to include the presence of a quiet side in their reports. However, current practice applications of noise mapping methods usually underestimate the noise level at the shielded façade when the most important contribution is sound propagation over the rooftop. Multiple reflections from opposite façades in street canyons are not sufficiently taken into account. In addition, sources at distance much larger than normally taken into account in noise maps might in some cases still contribute significantly. Since one of the main reasons for this poor approximation is computational burden, an efficient engineering model is proposed, which considers multiple reflections and turbulence scattering. The model uses an analytical function of a complexity comparable to ISO 9613 formula for noise barriers that is fitted to an extensive set of FDTD (finite difference time domain) simulations of canyon-to-canyon sound propagation. This model allows calculating the background noise in the shielded areas of a city, which could then be used to refine noise mapping calculations.

ISBN 978-80-01-05013-2 ISSN 2226-5147