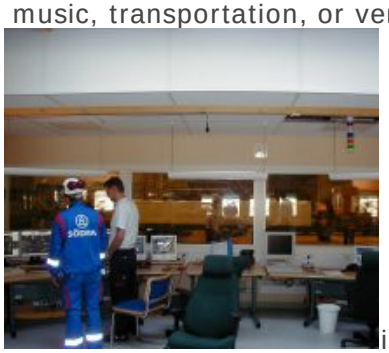
Wind turbine infrasound more problematic than audible sound

Low frequency noise and human response

http://medicine.gu.se/english/phcm/occup_enviro/research/Sound_Environment_and_Health/low-frequency-noise-and-human-response

The research unit has carried out research into human response and adverse effects of low frequency noise for many years starting already in 1985, and was responsible for the scientific basis of the limits for low frequency community noise indoors (SOSFS 1996:7 revised 2005:6) and also in the occupational environment AFS 2005:16) in Sweden. Low frequencies lack an internationally established definition but usually indicates the frequency range of 20 to 200Hz. In nature, frequencies below 200Hz are signals of thunder, volcano eruptions, earthquakes or storms - events that are likely to induce arousal or fear. In the urban soundscape, low frequencies may origin from amplified music, transportation, or ventilation/compressor units. Our hearing in the low frequency range  is, compared to the higher frequencies, less sensitive and that has, for many years, led to the misconception that low frequency sounds are also less annoying. Today it is known that low frequency noise has a great annoyance potential, and that some people seem to react adversely even to levels just above their hearing threshold. Factors inherent in most low frequency noise such as the throbbing characteristics, the intrusion of low frequencies felt when other frequencies in the sound are attenuated, and the vibrations sensations sometimes felt contributes probably to annoyance. The risk for adverse effects are of particular concern because of its general presence due to numerous sources, an efficient propagation of the noise from the source and poor attenuation efficiency of building structures. The importance of low frequency noise has been acknowledged in the World Health Organization document on community noise, which state that “health effects due to low frequency components in noise are estimated to be more severe than for community noise in general” and that “special attention should be given to sources with low frequency components”.
Our research focussed initially on annoyance and subjective effects of low frequency noise. Later we explored sleep disturbances of low frequency noise and also more in depth how work performance was affected. The latest studies were performed at the department of Acoustics in Aalborg Denmark, with the aim to explore perception and hearing of very low levels of low frequency noise.

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