

# 15. Protective measures against noise pollution as well as infrasonic and ultrasonic vibrations need to be human oriented.

- ultrasonic = sounds of frequencies higher than 20,000 Hz
- infrasonic = sounds of frequencies lower than 20 Hz
- human hearing 20 – 20,000 Hz



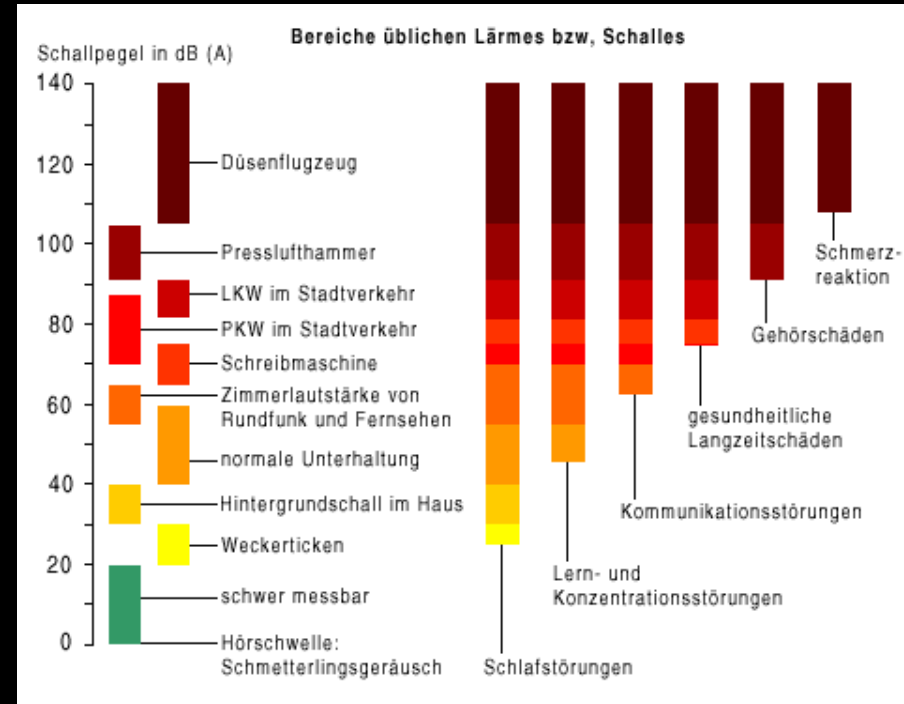
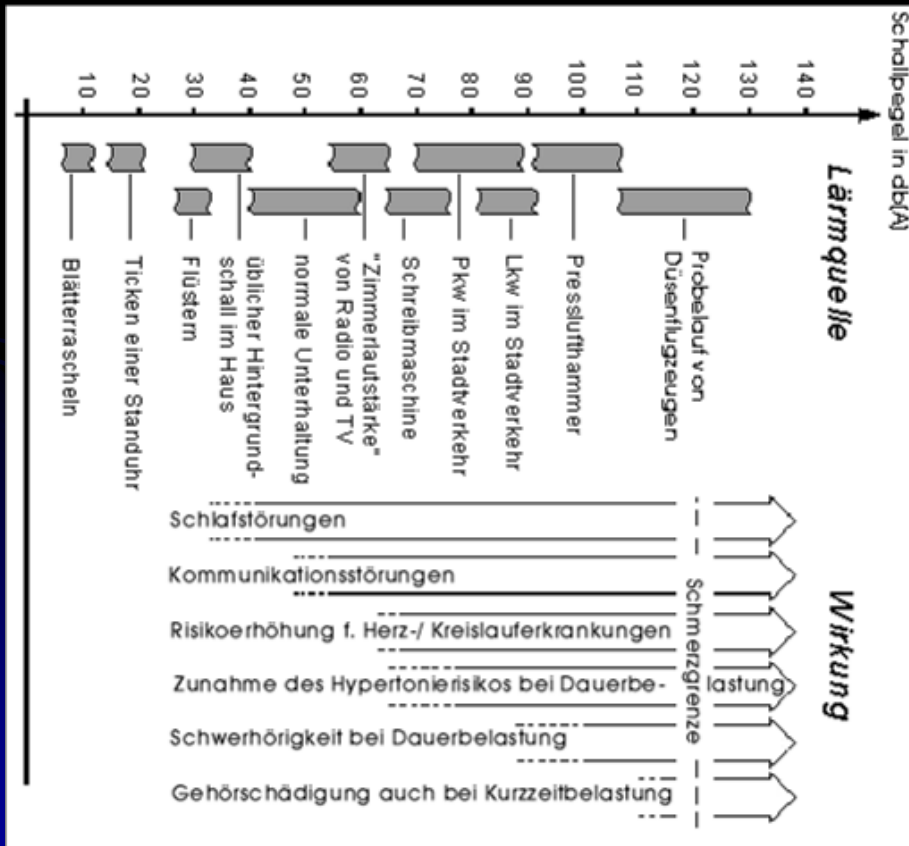
Infrasonic and ultrasonic sound can create vibrations and oscillations. Especially vibrations can cause stress in humans

If they enter buildings or are transmitted in buildings via sound

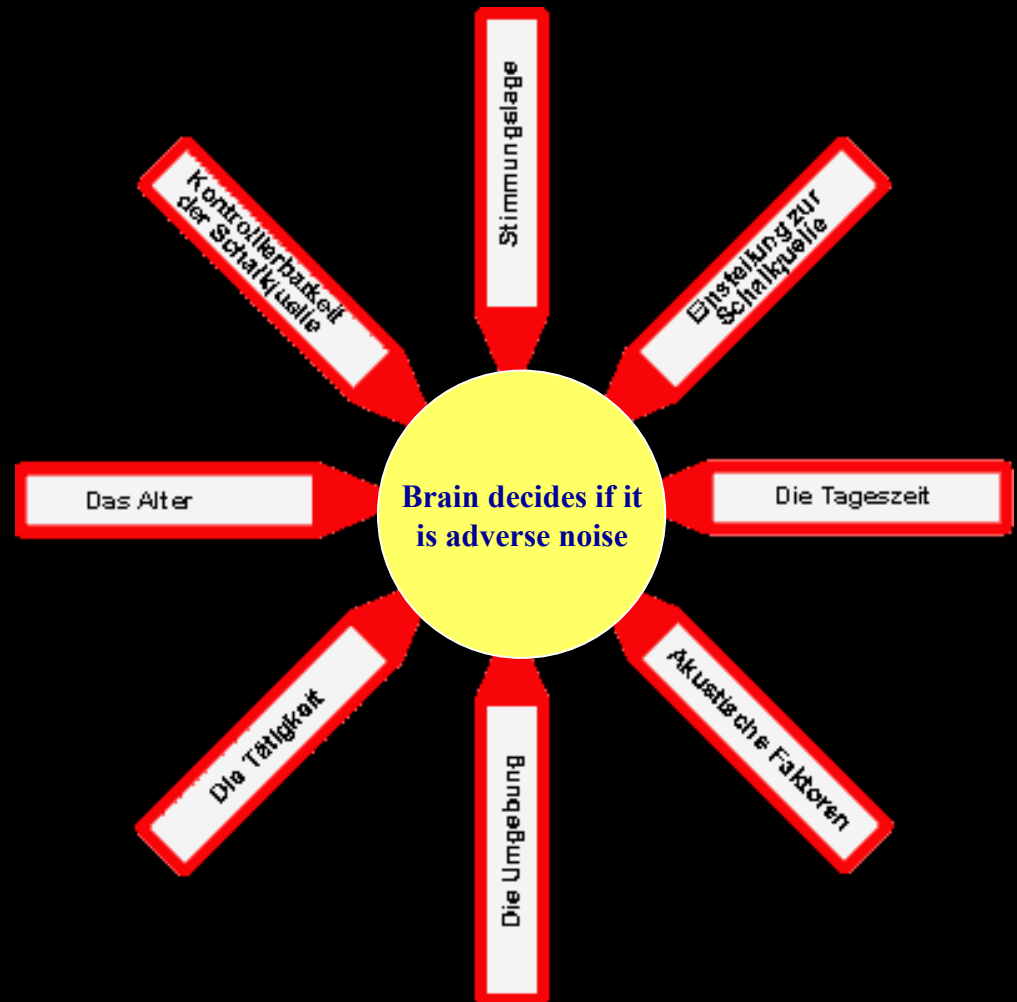
Bridges they can resonate with the human body and cause damage




# Medical impact of noise



# How do we perceive noise





**16. Only building materials with little or preferably no radioactivity shall be used.**

**Location of building sites important**



# Radioactive building materials

Pumice, concrete aggregates, drywall, tiles granite, bricks, blocks ,antiques etc.



Detection → Geiger counter scintillation counter



## 17. The natural balance of atmospheric electricity and ion concentration shall be maintained → disturbing factors

1. A building site shall be geologically undisturbed. Including Radon
5. Natural and unadulterated building materials shall be used.
6. Walls, floors and ceilings shall be diffusible and hygroscopic.
11. A heating system shall feature radiant heat using as much (passive) solar heat as possible – open fire and candles are ion producers

### Other factors which disturb the air ion balance

- => interior decoration - furniture
- => synthetic carpets
- => synthetic paints and wall coverings
- => other synthetic materials
- => computer monitors, TV
- => AC magnetic and electric fields, DC electric, radon, radioactivity

## Natural electricity



Natural conditions: air electricity 10 – 200 Volt per meter V/m  
air ionization more than 1000 / m<sup>3</sup>  
relation 1 / 1 same count of plus and minus

# Influencing factors for a disturbed electro climate and imbalanced air ion situation

- Surface voltage of materials
  - makeup of surroundings
    - Conductivity of building materials and humidity
      - Conductivity of interior materials (discharge time)
        - friction and air movement ( convection and forced air, air condition )
          - distance to charged source



## 18. The Earth's natural magnetic field shall not be altered or distorted.

Focus: Sleeping areas and work places - long term exposure

Metal objects like steel beams, metal parts, furniture  
steel roofs, loudspeakers, spring coil mattresses

Detection methods – precision compass – geo magnetometer



19. Man-made electromagnetic radiation shall be eliminated  
(or reduced as much as possible).

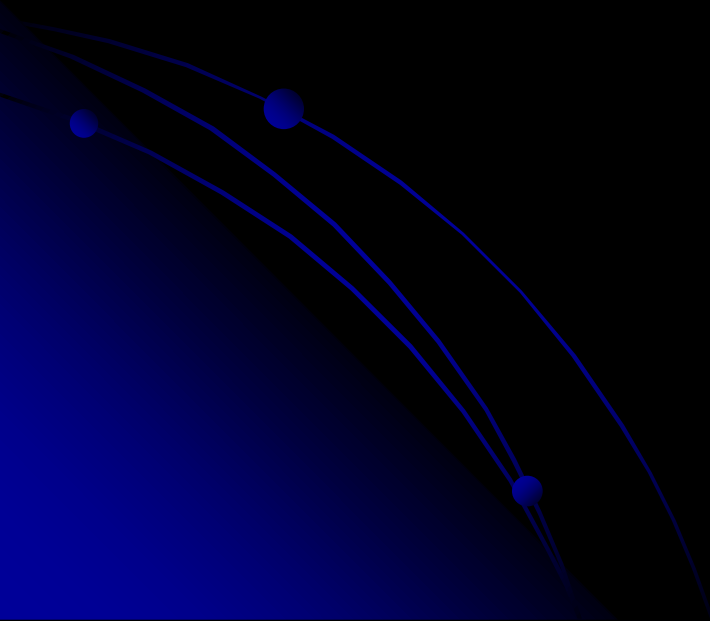
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The most famous Inventor of the Age—Thos. A. Edison in his Laboratory, East Orange,  
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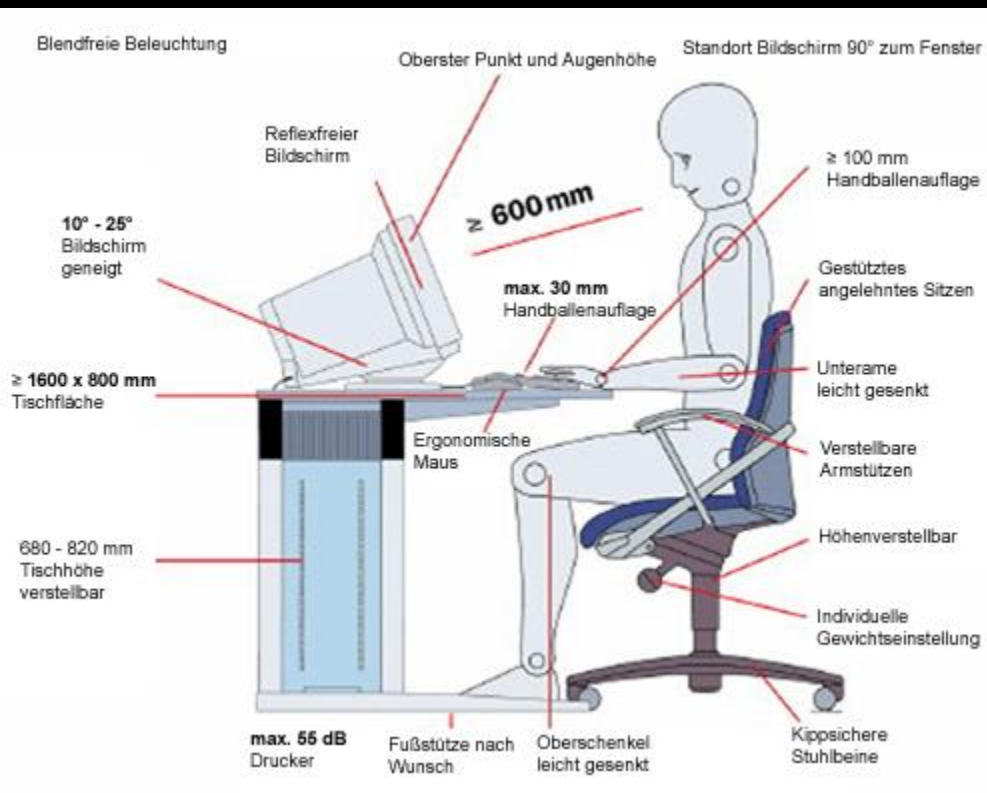
20. Cosmic and terrestrial radiation is essential and shall be interfered with as little as possible.

Compromise between permeable materials  
and RF protection

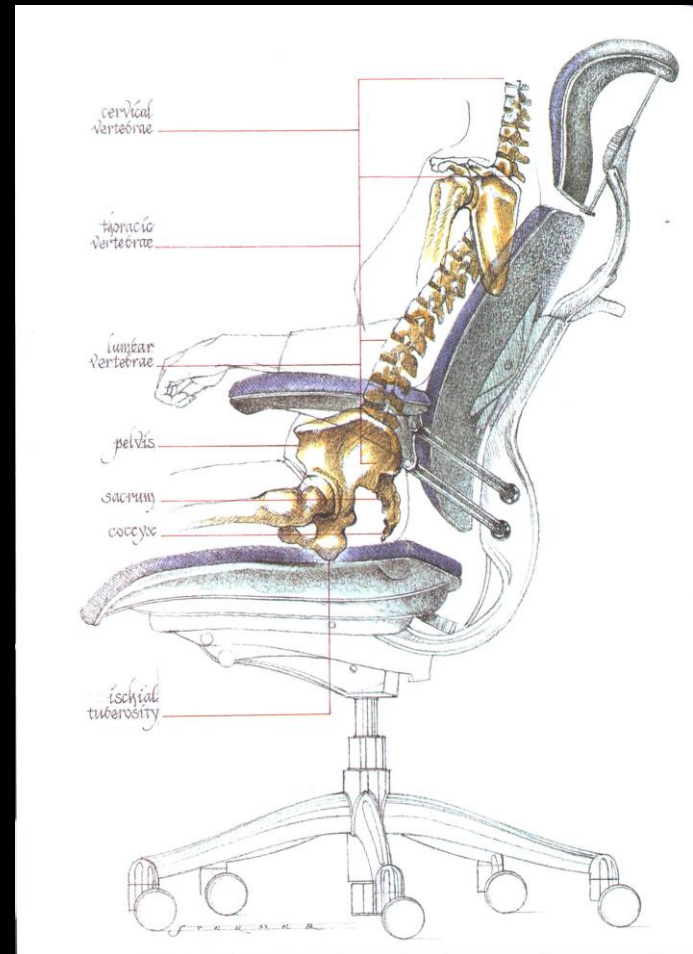
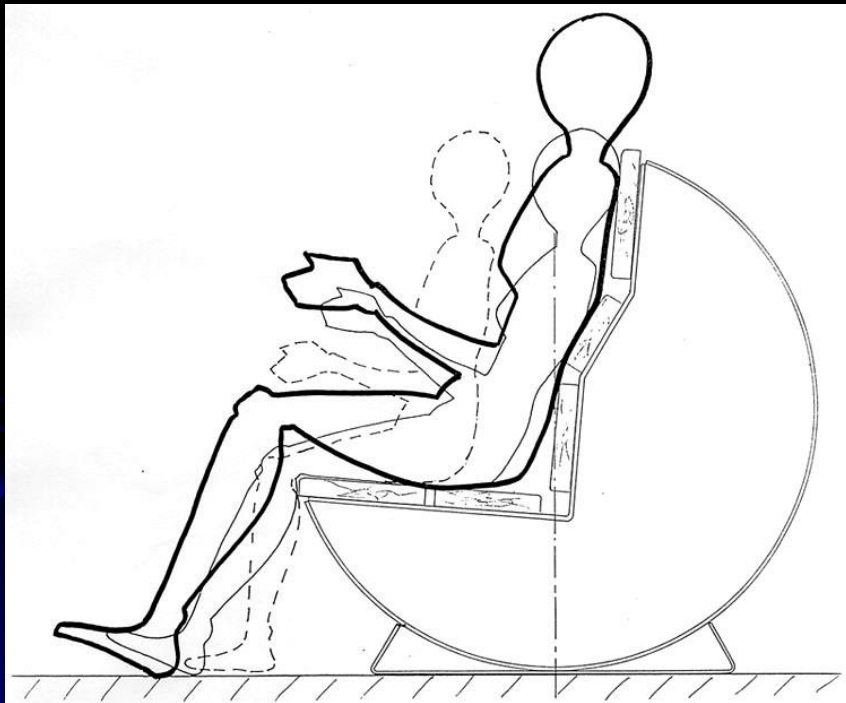


## 21. Interior and furniture design shall be based on physiological findings.

Buildings based on individual needs and preferences of occupants



Every person is an individual => furniture and interior design is individual





# Ergonomic furniture and healthy interior

## Ergonomic design of furniture

Besuchen Sie uns:  
Studio Muckenthaler

Individual  
needs









## 22. Harmonic measures, proportions and shapes need to be taken into consideration.



23. The production, installation and disposal of building materials shall not contribute to environmental pollution and high energy costs.

24. Building activities shall not contribute to the exploitation of non-renewable and rare resources.

25. Building activities shall not cause a rise in social and medical costs.













