8. Odors
in the Interior of Buildings

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Odor Microclimate

- Odorous substances are gaseous air components, perceived as **odors**. These are inorganic or organic substances mostly produced by humans or their activities.
- There are five basic types of oder:
  - **Eternal odor** (Human Odors)
  - **Aromatic odor** (ripe fruit)
  - **Isovaleric odor** (smoke from tobacco smoke and animal sweat)
  - **Dusty odor** (dairy products)
  - **Narcotic odor** (degrading proteins)

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Odor Microclimate

- **Odor** is a parameter that is difficult to quantify physically or chemically. It is the ability of odorous substances (odereants) or mixtures of substances to activate the sense of smell and to create sensation.
- **Odorants** are organic or inorganic substances produced by humans themselves and their activities. The dominant constituents of odorous substances in the interior of buildings are carbon dioxide and volatile organic compounds.
- **Olfakometry** is a method of objectively determining odorous substances in the air based on human olfactory senses.

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Odor Microclimate

- Odorous substances enter the interior **from the outside** or they are **generated in an indoor environment** (anthropogenic activities released from building materials).
- Approximately 50-80% of the odors enter the building from outside air.
- These are combustion engine products, production processes, and combustion gases from heat plants.
- As a result of **human activities, various odors such as cigarette smoke, odors of cosmetics, smell of garbage and detergents are emitted.**

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Odor Microclimate

- **The effects of the odorous substances** can be divided into 4 groups:
  - **Refreshing or reassuring**
  - **Positively encouraging**
  - **Atrophied or possibly intoxicating**
  - **Involuntary states of nervous upheaval and aggression**

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Optimization of Odor Microclimate

- The optimal odor climate can be provided by **interfering with the source** of the odor or by **interfering with the field of transmission** from the source to the exposed subject.

- he most effective way to optimize is to **reduce or completely eliminate the odor source**, for example by using fast-drying colors.

- The optimization of the odor microclimate by interfering with the transmission field can be achieved **by limiting the spread of oders in the building, by sufficient ventilation, air filtration, deodorization** or **neutralization with ionized ozone**.

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Optimization of Odor Microclimate

- Filtration of odors is carried out using **filters with activated carbon or charcoal**, by washing with water, by air, by biological washing machine or by biological filter.

- The **Biological washing machine** works on the principle that odor gases are absorbed in scrubbing liquid with dispersed microorganisms. This filtration method is particularly suitable for heavily polluted gases.

- **Deodorization** is based on the use of a different, stronger, but pleasant odor (fragrance) than the original odor.

- The odors can also be eliminated by **intensive ionization of air** with high concentrations of negative aeroionics.

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