

# HUMIDITY IN OFFICE BUILDINGS

## THE SITUATION

### The underrated performance factor

Optimum humidity in office buildings is now no longer exclusively a feel-good factor – it can have a direct impact on the performance and health of employees. Energy-efficient construction methods and increasing optimisation of the use of floor space are making dry air into one of the biggest sources of disturbance in the office. Today, a third of office workers now feel frequently or continuously disturbed by dry air.



“Workplace management” and “new ways of work” are keywords that for several years now have been attracting a great deal of attention around the world in the field of facility management of office buildings. Underlying this is the realisation that the design of the working environment has a significant influence on the well-being and health of employees, and therefore on their performance. In the search for the best minds for an organisation (the “war for talent”), the workplace and the facilities it offers play an important role in people’s decision to choose an employer. This assessment is also gaining increasing acceptance in human resource management. In practice, however, things still often look somewhat different: The uncompromising goal of energy efficiency gives rise to award-winning green buildings that, from a climate control perspective,

nevertheless not infrequently require renovation within one or two years. Airtight building envelopes, large glass facades and the absence of air conditioning systems may indeed produce an excellent energy balance. But if they are poorly planned, people suffer from air that is too warm and too dry. The mucous membranes dry out, the voice becomes cracked, employees become ill. The optimisation of office space through the “open space” approach also often has a negative impact on the well-being of employees. This is often caused by the pressure to drastically reduce office space in order to reduce costs. The shrinking of office space can be compared to a crash diet. Lack of privacy has a negative impact on job satisfaction, and makes people more sensitive and more susceptible to sub-optimum climatic conditions.

Surveys show that more than a third of all office workers now feel continuously troubled by dry air in the workplace. The negative consequences for health and performance that this entails create large market opportunities and growth potential for providers of humidification systems. In particular, direct humidification systems that are suitable for retrofitting provide added value for building users, owners and office users that until now was difficult or impossible to implement.



## Sales Guide

# HUMIDITY IN OFFICE BUILDINGS

## By 2030, offices will be perfectly air-conditioned

In the joint research project Office 21, the German Fraunhofer Institute for Industrial Engineering IAO ([www.iao.fraunhofer.de/lang-en/](http://www.iao.fraunhofer.de/lang-en/)) investigates the ways in which office and knowledge work are changing. The researchers want to provide precise options for action for the successful design and implementation of this future business work environment. The scenario "Working environments 4.0 – how we will work and live tomorrow" provides the basis for the forecasting process. It is based mainly on a survey of selected experts, and on the analysis of numerous sources on studies of trends and futures from a range of different authors and areas of focus. It interviewed more than 140 selected experts from the fields of industry, academia, associations and politics. 71 % of respondents expected that by 2030, all offices will have an optimum indoor climate with respect to temperature, humidity and air renewal throughout the year. 47 % predicted that this would be the case by 2025. The majority of experts concur with the thesis that proper lighting, good acoustics and an inspiring ambience are design and planning issues that are just as important as controlled room temperature and humidity.

5



## "Too dry" is almost as bad as "too loud"

In April 2010, the Swiss SBiB study, a survey of offices conducted by the Lucerne University of Applied Sciences, compiled a statistical summary of the data available for the evaluation of working conditions in offices. Using an online questionnaire, the researchers collected responses on the topics of work environment (air, indoor climate, light, noise, etc.), technical equipment, furniture, ventilation, work organisation, satisfaction, requirements of the workplace, comfort, health symptoms and absences. The selection of respondents was through a random sample of a total of 540 companies from the Business and Enterprise Register of the Swiss Federal Statistical Office. 116 companies and a total of 1,230 people participated in the study. With regard to negative environmental factors, the most frequently cited were:

### What disturbs the well-being in the office? (multiple answers possible)

noise in the office:

50 %

dry air:

35 %

poor air:

32 %

too high room temperature:

24 %

(source: Swiss SBiB Study, Lucerne University, April 2010)

6



## The situation today

The demand for optimum climatic conditions in the office will continue to rise in the future. In the opinion of most office users, dry air is already one of the biggest sources of disturbance, with a direct impact on performance and health. Direct humidification can be used in all offices, and is particularly suitable for retrofitting.

## Direct room humidification today:

- 1 Humidity as a performance factor
- 2 The Fraunhofer Institute in Stuttgart is conducting research with DRAABE
- 3 Customer service (Thomas Cook)
- 4 DRAABE NanoFog Evolution fits in any office
- 5 Call centre (Kaffee Partner)
- 6 Open space (Jura)