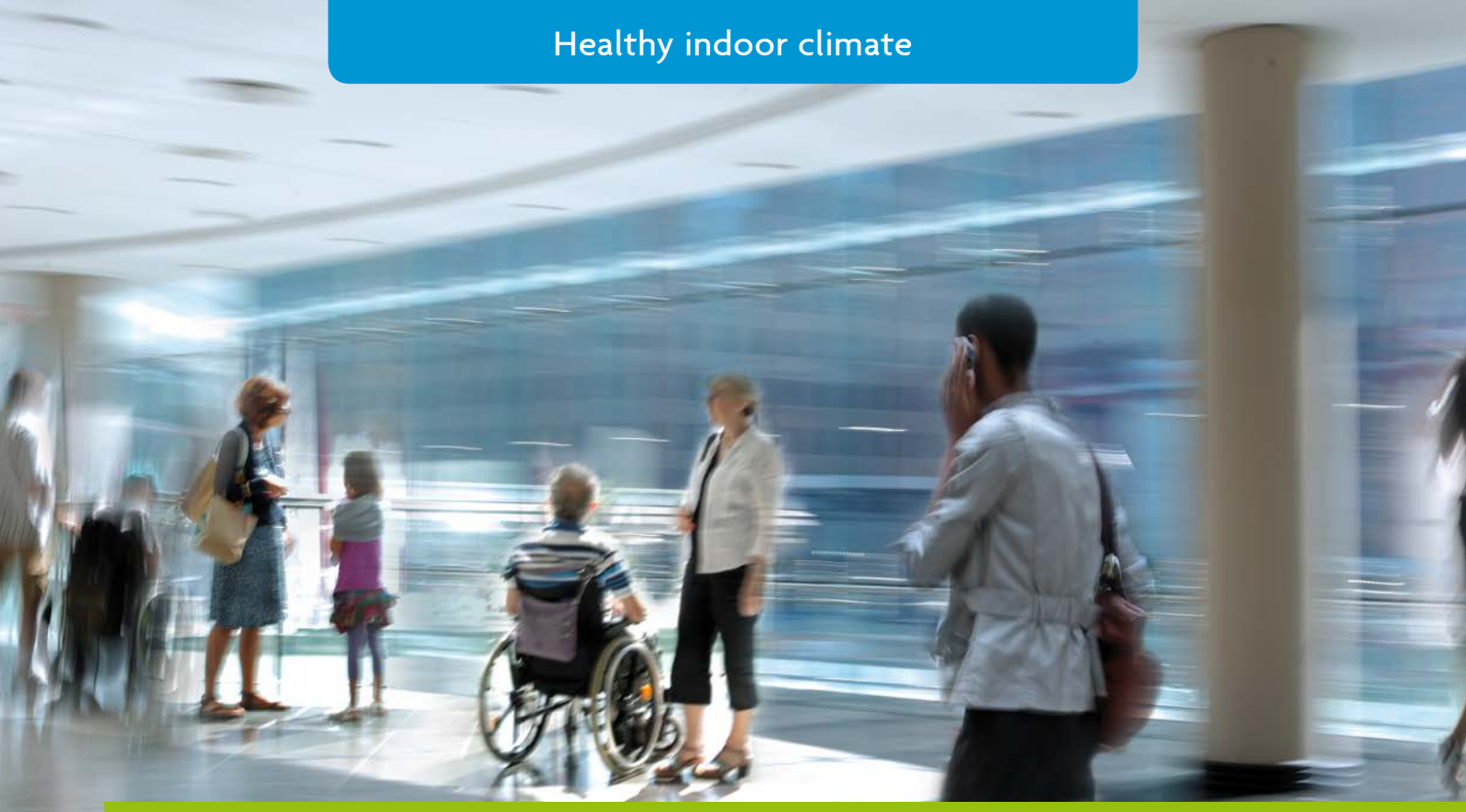

Brakel®
Care Concept

Crucial in a “healing environment”

In recent years there has been a great number of changes in the thinking behind the design and construction of care buildings such as hospitals and residential care homes. New scientific insight has led to the development of the "healing environment". This concept offers a wider vision of the residential and care environment because the influence of a building on the welfare of residents, patients, customers and personnel has also been addressed. The Brakel Atmos has adopted this new approach to the care environment as the foundation for its care concept.

Brakel has developed a simulation model where daylight access, ventilation, fire safety and sustainability are paramount. This means that every care building - from residential care homes to hospitals are provided with a safe, healthy and energy conscious care environment. This model is an important tool which allows clients to make balanced choices and to provide performance assurances. Simulation variables can provide insight into how certain systems and superstructure options can influence the comfort and energy performance of a building. The care concept focuses on daylight access, indoor climate en fire safety. Sustainability is also considered to play an important part.

Proven effects of daylight

A lack of daylight can lead to depression, insomnia, decreased performance at work and absence through illness. Research has been carried out in America into the effect of the environment on human health. This has shown that a natural environment reduces stress levels and has a positive effect on people's health. Daylight activates people and a green landscaping encourages concentration. Apart from the health issues there is one other advantage: modern architecture is energy-efficient. The solar energy that the building produces itself can be utilised for heating.

Scientific research has proved that patients recover faster in areas that have access to daylight. Researchers from the Royal Academy of Dutch Sciences (KNAW) have discovered that patient suffering from Alzheimer's disease benefit from being treated with a combination of light and the hormone melatonin.

This results in improvements in mood, sleep patterns and the daily function of the elderly suffering from dementia. Generally speaking, the need for daylight increases as people age: they need five times more daylight to carry out tasks satisfactorily. Daylight not only as a healing effect on residents, patients and clients but is also beneficial for personnel and visitors.

Central areas: Large central areas provide the best opportunity to offer the benefit of the healing properties of daylight. This is why glass covered atria are becoming increasingly more common in care buildings. These provide a pleasant atmosphere and a healthy environment which leads to increased performance. Furthermore, the atria act as links between the care buildings and the outside world. Brakel has many years experience in the design, construction and installation of functional and aesthetic atria. Our clients are able to make balanced choices regarding the required atrium using our new simulation model.

Healthy indoor climate

Indoor climate

How people actually feel in the building is largely attributed to the indoor climate. Temperature, humidity and ventilation can determine how comfortable people actually feel. Research has shown that an adequate supply of fresh air using natural ventilation has a positive influence on people. However in practice, the value of the indoor climate is often underestimated. A large percentage of climate systems underperform. This is the cause of comfort issues in 90% of the cases reported. Hospitals use on average twice as much energy as offices. While some hospitals can use up to 3 times more energy than others. This is why climate control needs to be carefully addressed during the design or extension of hospitals and other care buildings.

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Healthy indoor climate

Ventilation: healthy air and a pleasant temperature

Too little or inadequate ventilation increases the CO_2 levels and the temperature in a room leading to a decrease in performance. Brakel Atmos can prevent this by installing on-demand, controllable natural ventilation in large areas. Natural ventilation works by using updraft and provides an effective, silent and energy efficient climate control. Controllable ventilation also provides a constant air supply and avoids excessive energy loss. CO_2 or temperature increases, the excess CO_2 and heat can be expelled using controlled ventilation. Natural ventilation is one other important advantage: the efficient exhaust of smoke and heat during a fire.

Fire safety: integral solutions

It goes without saying that infirm residents, patients and customers should be able to leave a building safely in the event of a fire. An effective system for smoke and heat exhaust, prompt fire detection, the alerting of any people present and any fire services together with an efficient evacuation plan are of vital importance. Any fire safety systems in hospital sections and/or residential areas, central areas and parking facilities should obviously be linked. This is why it is vital to consult with the Brakel specialists to create an appropriate fire safety plan at the earliest opportunity.

Care concept: insight into performance

Brakel has created a unique program using simulation models to provide performance indicators based on temperature, the satisfaction of the building inhabitants and the energy consumption of the building. The physical properties of the building superstructure have been taken into account, along with the various control configurations for ventilation, the building orientation, the type of glazing, sunblinds and any use of solar energy. The use of simulation variables means that an informed choice can be made for the level of comfort and energy consumption required for the building.

The care concept offers the most benefit when it is employed in the design phase of the project. This allows a greater freedom of design for all concerned and optimum coordination of each of the various disciplines. The result is a care environment where all concerned are comfortable. The main objective of creating a healing environment is achieved. Added advantage: an environment with ample daylight and a healthy indoor climate has economic benefits. Patients heal faster which saves the hospital money. An optimum indoor climate control also reduces running costs for care homes and housing associations.

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