

Occupants of Green Mark buildings are healthier: Study

They are less likely to suffer ailments such as fatigue, headaches

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SINGAPORE— Not only are Green Mark-certified buildings better for the environment, their occupants are healthier, local researchers have found.

The findings of the 3.5 year study, conducted by the Building and Construction Authority (BCA) and National University of Singapore (NUS), will guide changes to the Green Mark schemes going forward. A one-year pilot of a new set of criteria that places more weight on “smart and healthy” buildings will be conducted, the BCA said yesterday. Through the Green Mark scoring system, owners of existing non-residential buildings will be encouraged to use efficient filters to improve indoor environment quality and adopt smart-control technologies.

The BCA wants to ensure the Green Mark scheme, launched in 2005 for buildings to be more eco-friendly, remains relevant to occupants, as well as building owners and developers, said chief executive Hugh Lim. “As we bring it forward, we’d like to place a more balanced emphasis not only on energy savings but also the well-being and the health of occupants. And associated with that is, really, the quality of air that they enjoy inside Green Mark buildings,” said Mr Lim. About one in three buildings here meet minimum Green Mark standards.

The study by BCA and NUS was released at the opening of Singapore Green Building Week yesterday. It began in Jan 2014 and covered eight Green Mark and six non-Green Mark buildings between three and 50 years old. Researchers examined the indoor environment quality of the buildings — which were not identified — and occupants were surveyed over a week in each building.

More than 360 occupants were polled in total, and those working in Green Mark buildings were more satisfied with the indoor temperature, humidity, lighting, air quality and environment. They were less likely to experience symptoms of “sick building

syndrome” such as unusual fatigue, headaches and itchy, irritated skin. For instance, occupants of Green Mark buildings were about 60 per cent less likely to get a headache than those in other buildings. The findings provide “hard evidence” that the certification has resulted in healthier and more productive occupants, said one of the researchers, NUS Associate Professor Tham Kwok Wai.

Indoor environment quality is vital because many people spend more time indoors, said Assoc Prof Rajasekhar Bala of NUS’ department of civil and environmental engineering, who was not involved in the study. Maintenance standards and factors such as the layout of the office and the use of partitions (which affect the movement of air) could be other reasons why some buildings fell short in terms of indoor environment quality, he said.

In future, the Green Mark scheme could also encourage better office interiors and workplace health programmes, said the BCA. For instance, buildings could be designed to get more occupants to take the stairs. The BCA is working with the Health Promotion Board and will announce more details in the middle of next year.

Building owners such as Chan Brothers Travel, which is looking to redevelop some of its properties in the Central Business District, said BCA’s efforts targeted at the well-being of occupants are important. Chan Brothers’ spokesperson declined to identify its buildings, but said it wants to attain Green Mark certification for its existing properties and would take changes to the scheme into account during its application.

Data submitted to the BCA show that buildings have consumed less energy per square metre of space over the past decade. Levels today are 9 per cent lower than in 2008 for commercial buildings, healthcare facilities and educational institutions. Hotels showed the most improvement but healthcare facilities’ energy-use intensity went up by 10 per cent. This was due to growing demand for healthcare services and increasing sophistication of operations and equipment at healthcare facilities, said the BCA.

In future, it will be compulsory for commercial buildings to disclose their energy performance, it added.