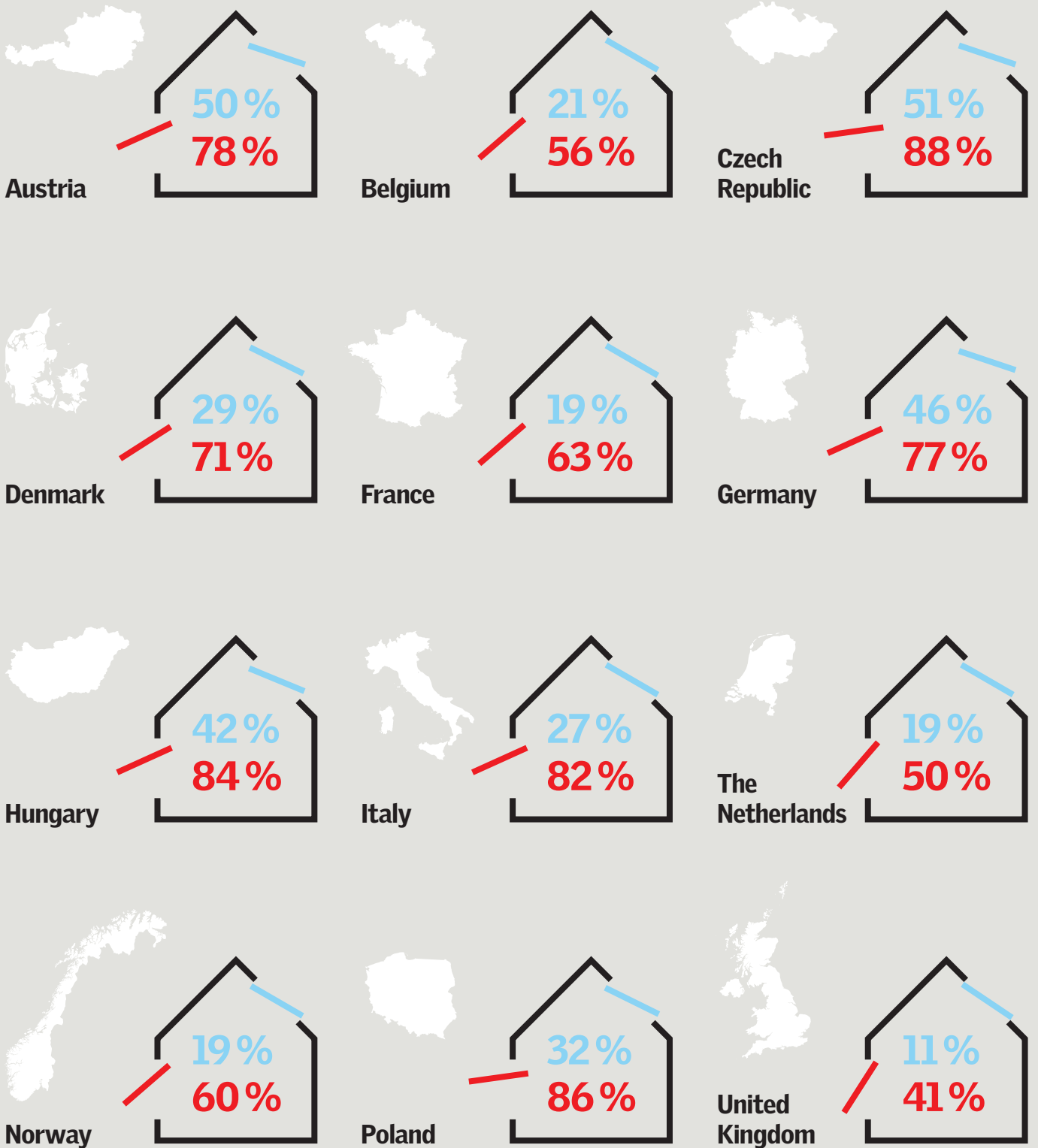
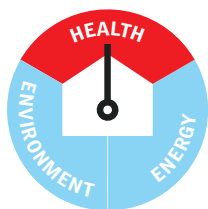


Which countries air out their homes the most?

All Europeans ventilate their homes significantly more during summer than during winter, but there are huge differences between countries, with Czechs being the ventilation champions of Europe. Figures show how many air out several times a day in at least one room.

— Summer
— Winter





Comfort at home

Europeans: Comfort is king

A good home is a comfortable home. Comfort is at the top of the list of what Europeans look for in a new home. Better comfort is the main reason for making changes to the home. What is more, a comfortable home is also a healthy home.

What makes a good home? There are, unsurprisingly, many answers to this question. However, the Healthy Homes Barometer 2015 gives a clear indication that comfort is at the top of the list.

Europeans value comfort the most when choosing a new home. 53 % attribute it the highest importance. 95 % attribute it above average importance.

Overall satisfaction with the current home also seems to relate to comfort.

Comfort and health are closely related. Lack of fresh air and daylight may cause illness and fatigue, and these two health indicators – fresh air and daylight – prove to be strong comfort indicators as well. According to the Healthy Homes Barometer 2015, the more satisfied Europeans are with daylight and fresh air in their home, the more they are also satisfied with the comfort of their homes.

The four indicators below shed further light on how Europeans view four of the basic tenets of healthy, comfortable living in the home: Daylight, fresh air, sleep and good health.

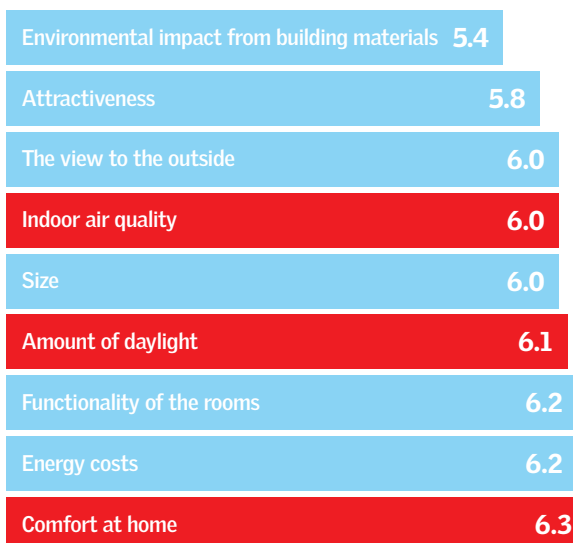
Overall, Europeans express high levels of satisfaction with these indicators. However, this does not mean there are no challenges. Since 80 million Europeans live in homes that are unhealthy to live in, it is more likely, that Europeans are unaware of the problems they experience at home and the comfort levels that are actually possible.

Indicator 4+5

If you were to move into a new house, how important would you consider...?

Comfort is the number one priority of the nine factors surveyed. Daylight and fresh air are middle scorers but at a high level. Environmental impact is lowest.

Read about indicator 4 and 5 on next page.



Indicator 4: How important is daylight to Europeans?

Europeans value daylight in the home. If they were to choose a new home, 47 % would give highest importance to the amount of daylight. 92 % would give it above average importance, resulting in an indicator score of 6.1 out of 7. Daylight comes in at fourth place after comfort, energy costs and functionality, but ahead of size, outside view and attractiveness.

Women attribute significantly higher importance to the amount of daylight in a new home. 55 % of women assign it the highest importance compared to 39 % of men.

With greater age comes greater appreciation of daylight in the home. 58 % of Europeans aged 60 to 65 assign it the highest importance, compared to 36 % of the 18-to-29 year-olds.

Europeans also invest in improving daylight. More than one in four Europeans – 27 % – have made changes within the last five years aimed at improving the amount of daylight in their home.

These improvement efforts do not arise from an overall dissatisfaction with the amount of daylight in the home. On the contrary, 31 % of Europeans are fully satisfied, and more than 4 in 5 ex-

press above average satisfaction with the amount of daylight in their home. Of the nine drivers for home satisfaction surveyed, the amount of daylight is the top performer.

However, room for improvement does exist. The average satisfaction score across countries is 5.6 out of 7, which leaves a gap between the very high level of importance assigned and the current level of satisfaction.

Furthermore, there are variations when it comes to how much daylight at home is appreciated. It is appreciated most in Hungary, Italy and Austria, whereas daylight is attributed the lowest importance in Norway, Denmark and the UK.

Access to daylight at home is equally beneficial to all human beings, no matter where they live, so a likely explanation is that people value health drivers that are easily accessible and that they have become accustomed to. This would also be a possible explanation for why the residents of Norway, the Netherlands and Denmark have made the least changes to improve daylight in the home within the last five years.

Indicator 5: How important is indoor air quality to Europeans?

Indoor air quality is a major health concern for Europe. Nevertheless, Europeans are satisfied with the indoor air quality in their current home. Satisfaction is in the upper regions of the scale, with an average score of 5.4. They value indoor air quality and would have it as a priority if moving to a new house, and they invest in improving it. In other words, they view indoor air quality in much the same way as they do daylight.

If they were to choose a new home, 42 % would give highest importance to the indoor air. 89 % would give it above average importance, resulting in an indicator score of 6. 28 % have made changes within the last five years to improve indoor air quality.

Women attribute more importance to indoor air quality, but the gender gap is smaller compared to the view on daylight. 47 % of women assign it the highest importance compared to 37 % of men.

Higher age also means greater appreciation of the importance of indoor air quality. 55 % of Eu-

ropeans aged 60 to 65 assign indoor air quality the highest importance, compared to 31 % of the 18 to 29 year olds.

However, room for improvement exists.

That Europeans do value good indoor air quality is evidenced in their behaviour – to some extent. In the summer, 68 % air out at least one room in their home more than once a day, and another 22 % air out once a day. Less than 4 % air out less frequently than once a week. However, these figures drop significantly in the wintertime. Only 28 % air out more than once a day, and 48 % air out once a day. Almost one quarter of all Europeans neglect the daily change of the indoor air in the wintertime.

Also, drying clothes indoors is a bad habit that Europeans apparently do not seem to be able to shake off. 65 % of all Europeans dry clothes indoors a least once a week, even though the overall risk for developing asthma is approximately twice as high for people living in homes with mould or damp. Only 13 % can boast never to fall prey to this temptation.

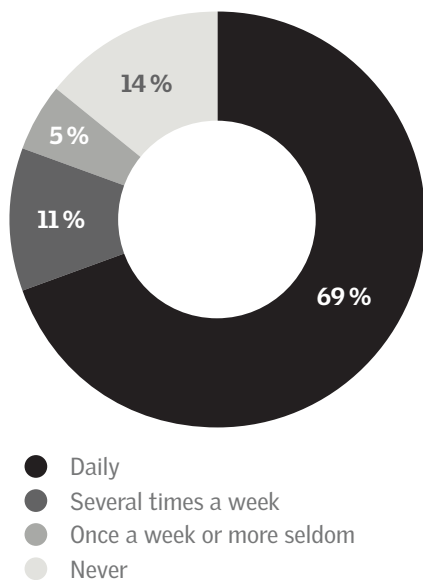
Culture and climate both seem to influence behaviour to a very significant degree. Czechs, Poles, Hungarians and Italians take the lead when it comes to airing out several times a day in the summer, with more than 80 % doing so, while half of the people or less living in the UK and the Netherlands do this.

Optimal sleep requires:

fresh air
thermal comfort
lack of noise
complete darkness

Indicator 6

How often do you sleep in complete darkness?

**Indicator 6: How do Europeans experience the quality of their sleep?**

According to the Healthy Homes Barometer 2015, Europeans find that sleep is vital for good health. Yet, it is estimated that between 16 % and 30 % of the working population suffer from insomnia¹⁸. Insomnia lays the foundation for health problems including poor cognitive function, stress, depression, poor social interaction, metabolic and cardiovascular diseases, and an increased susceptibility to infection or even cancer¹⁹.

It is difficult to sleep well unless the indoor environment is comfortable. This includes fresh air, thermal comfort²⁰, lack of noise, and complete darkness in the bedroom²¹.

To a large extent Europeans have taken heed of this good advice, as more than 2 in 3 sleep in complete darkness daily, making for an indicator score of 69 %. However, almost one in five Europeans rarely, if ever, sleep in complete darkness, even though it is well established that healthy light is inextricably linked to healthy darkness²².

Surprisingly, there is only a very limited relationship between seeing sleep as important for one's health and sleeping in complete darkness. For instance, 14 % of Europeans who view quality sleep as very important for their health never sleep in complete darkness.

Rather, there seems to be cultural differences in Europe with regard to sleeping habits. 79 % of Poles sleep in complete darkness every day. This is significantly more than many other Europeans. In Germany and Italy only a little more than 60 % sleep in complete darkness every night, while normal behaviour in the northern countries of Denmark, Norway and the UK seems to be to sleep in complete darkness most often.

Another important factor for high quality sleep is good indoor air quality, although again, no strong relationship seems to exist between valuing a good night's sleep and airing out the home. The problem is most apparent in wintertime, where almost one in five Europeans who view high quality sleep as very important for their health do not air out their home at least once a day. For Europeans who value sleep lower in terms of health, the number is closer to one in three who do not air out daily in the wintertime.

These findings suggest that not all Europeans are sufficiently aware of what is required of the home environment for a good night's sleep, or are unable to live by these guidelines.

Indicator 7: Do Europeans link indoor climate to health?

An unhealthy indoor climate can have many negative consequences. Inflicting residents with asthma or allergies is one of the most common²³. According to the Healthy Homes Barometer 2015, more than one-third of all European households have one or more people with asthma or allergies.

However, the link between these illnesses and the indoor climate does not appear to be well-known amongst Europeans, neither does the importance of correct behaviour.

In households with one or more people suffering from asthma or allergies, between one-quarter and one-third of all express only a medium or low level of concern about unhealthy indoor air quality.

Furthermore, people in households with asthma or allergies do not air out more than Europeans in general, and they dry their clothes indoors as much as people in other households. The importance of avoiding chemicals in products in the home seems to be perceived as only marginally related to these diseases, and no special thought is given to emissions to the indoor air when choosing building materials.

Only in households with four or more people suffering from asthma or allergies is there slightly more concern about an unhealthy indoor climate. 37 % from these households are very concerned, whereas 22 % from households without asthma or allergy are very concerned.

Of course, an explanation for lack of coherence between illness, concern and behaviour could be that families where one or more members suffer from asthma or allergy have already moved to houses with a better indoor climate. However, this is unlikely, as members of these families would not put significantly greater emphasis on indoor air quality if they were to move to a new house.

A more likely explanation is that there is a knowledge gap. Health issues do not lead to concern and changed behaviour because Europeans do not see a strong link between fresh air indoors and being healthy. Instead, a good indoor climate is linked to a feeling of wellbeing and comfort.

A knowledge gap causing inaction may to some extent be bridged by more public conversation, lead-

ing to increased awareness, more knowledge and ultimately changed behaviour – in this case about the health benefits of a good indoor climate. However, legislation and fiscal incentives are also important tools when trying to ignite change in consumption and production patterns²⁴, leaving the EU with a problem: While legislation is strong on building's energy performance, it is vague on indoor climate²⁵.

Indicator 7

36 %
of Europeans very concerned about an unhealthy indoor climate air out more than once a day in the winter

¹⁸"Sleep, Work, Live", Daylight & Architecture (22), autumn 2014. ¹⁹Circadian House Report (2013): "Circadian House – Principles and Guidelines for Healthy Homes", VELUX report. ²⁰Haskell, E.H., Palca, J.W., Walker, J.M., Berger, R.J., Heller, H.C.: "The effects of high and low ambient temperatures on human sleep stages". *Electroencephalography and Clinical Neurophysiology*, p. 51 (1981a). ²¹Veitch, J.A. & Galasiu, A.D.: "The physiological and psychological effects of windows, daylight, and view at home: Review and research agenda.", NRC Institute for Research in Construction, 2012. ²²The International Commission on Illumination (CIE), 2004/2009. ²³Towards an identification of European indoor environment's impact on health and performance", White Paper, Grün, G. & Urlaub, S. (2014), Fraunhofer-Institut für Bauphysik. ²⁴The World Bank: "Inclusive Green Growth: The Pathway to Sustainable Development", May 2012. ²⁵"Indoor Air Quality, Thermal Comfort and Daylight in the European residential buildings", Buildings Performance Institute Europe, 2015.