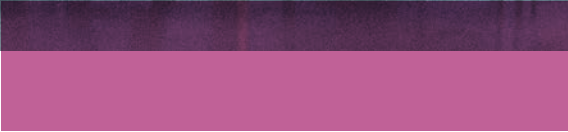


# Workplace productivity

Maximising employee performance through indoor comfort



#ThisFutureRocks

# Introduction

The health and wellbeing of employees depend on the quality of the buildings where they spend a major portion of their time. Improving buildings for businesses have well-known benefits such as reduced energy costs, maximising the use of space, and managing their impact on the natural environment – but rarely do these practices consider the impact that buildings also have on the quality of life and productivity for the people who work in offices every day.

A company's workforce remains one of its most valuable resources. Talented individuals drive the company's business goals and contribute to the overall growth of the organisation. Maintaining an environment that is conducive to collaboration, innovation, and supports the long-term health of workforces has become a distinguishing factor for today's employees. This consideration factors into career decisions now more than ever, making those organisations that prioritise the indoor comfort of employees more attractive to talented prospects.





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# Putting employee health and comfort on the business agenda

Making the business case for healthier work environments starts with understanding the adverse effects poor indoor climates can have on employees. The latest research shows that the average European will [work for 27 years of their lives](#), meaning they spend over 90,000 hours at their place of employment. Over this period, the indoor climate can have a significant impact on the health and wellbeing of employees, not to mention their performance levels.

## **Organisational impacts from poor indoor climates include:**

- Increased levels of absenteeism due to illness.
- Greater staff turnover and reduced talent retention
- Reduced performance and productivity that leads to a direct impact on the organisation's bottom line.
- Elevated costs for providing medical insurance to employees.
- Higher numbers of medical complaints by workers due to the physical working environment they are subjected to every day.
- Reports of physical discomfort caused by factors like temperature, humidity, glare, and noise in the workplace.

## **How to measure the business benefits of improved indoor comfort in office buildings**

Employee costs are one of the [biggest expenses in organisations](#) and could be as much as 90 percent of the total operating budget. Even the slightest improvement in employee productivity could have a drastic impact on the organisation's bottom line. Although business owners cannot manage every aspect of an employee's life, their working environment is entirely under their control. Thus, investing in healthier workplaces and renovating or remodelling offices for increased indoor comfort will ensure the business can reap long-term benefits from their workforce.

# 4 Focus areas for improved employee productivity

– with optimised indoor comfort

While a variety of frameworks exist to help define what a healthy and green office constitutes, the primary goal of this guide is to address issues that negatively influence job performance. A healthy workplace mitigates the effects of the environment, employee experience, and economic impacts of the indoor air quality, noise, lighting, and temperature in an office.

Each one of these elements can impact the resilience of a business, making them key enablers of future growth and continued success in a competitive market place. In the following sections, we address each of these factors and how they impact on job performance, including ways to overcome these issues using modern technologies and innovative renovation strategies.



Temperature



Humidity



Noise



Light and aesthetics





**10%**  
performance reduction  
in offices with poor  
thermal control





# Managing the indoor temperature

Maintaining a comfortable indoor temperature is vital for improving employee performance. If the building cannot adequately manage differences in temperature from the outdoor environment, employee productivity will suffer. Studies suggest that inadequate temperatures can also influence employee satisfaction, with [80 percent of office workers complaining](#) about the temperature in their work environments.

Extreme temperatures on either side of the spectrum will influence employee performance. Studies from the Building Performance Institute Europe (BPIE) suggest that temperatures below 21°C and above 26°C will significantly hurt employee productivity.

## **Specifically, exceeding the comfort ranges for employees in offices could mean:**

- Once the temperature exceeds 30°C in offices, employees will be 6 percent less productive.
- Generally, for every 1°C reduction in excessive temperatures, employee performance will increase by as much as 3.6 percent.
- A 4 percent reduction in productivity when temperatures go below 21°C in offices.

To effectively manage their indoor climate, business owners and property investors should use modern insulation materials (like stone wool) to help improve the thermal performance in offices. Enhancing the building's insulation in interior walls, ceilings, floors, and the exterior can help owners to manage their temperatures throughout the building while also reducing their energy costs at the same time. [ROCKWOOL insulation products](#) provide superior thermal performance while remaining versatile enough to support any interior design or office remodelling project.

# Improving indoor humidity and air quality

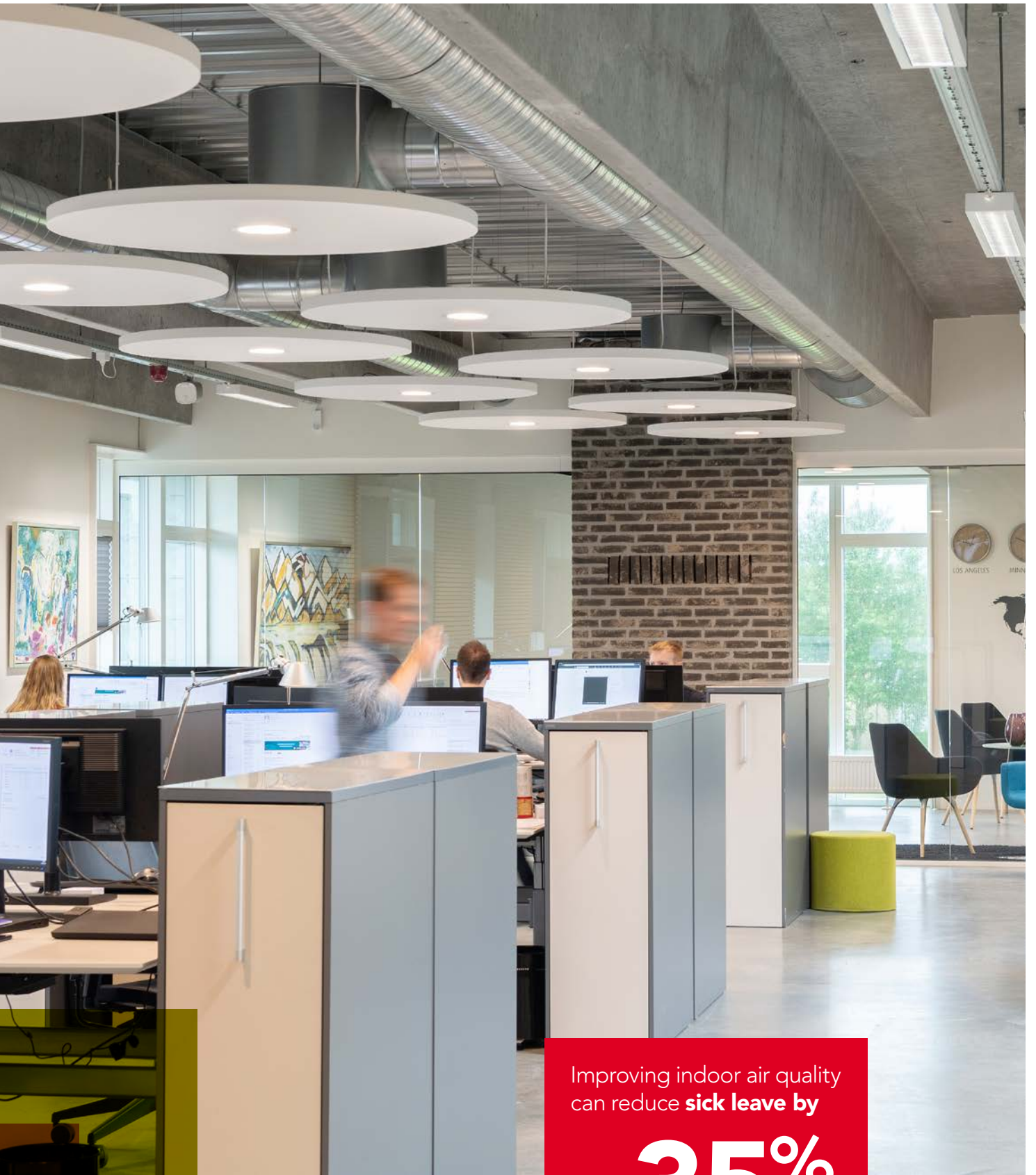
Poor indoor air quality can also be the cause of lowered job performance. Support systems ([like HVACs](#)) can help to mitigate the level of CO<sub>2</sub>, particulate matter, and volatile organic compounds. However, for these systems to be effective, it is necessary to ensure a well-insulated building envelope that is as air-tight as possible.

The efficacy of building support systems depends on the structure's passive barriers and the overall holistic design of the building. With [inferior indoor air quality](#), companies will experience:

- Consistently lowered performance by up to 10 percent, especially when combined with elevated indoor temperatures.
- Increased sick leave from employees working in poorly ventilated areas. Studies suggest that proper ventilation can reduce absentee days by up to 35%.
- Higher indoor temperatures and a lack of ventilation can exacerbate the effects of underlying illnesses like asthma and respiratory ailments.

Using stone wool insulation will allow office buildings to 'breathe' and maintain a comfortable indoor climate. By allowing vapour to pass through, stone wool helps keep indoor humidity at a comfortable and healthy level, without compromising on thermal comfort. Also, stone wool is designed to be hydrophobic, meaning it will not absorb moisture from the air, reducing the risk of mould growth and corrosion that could have a negative impact on [employee health](#).





Improving indoor air quality  
can reduce **sick leave** by

up to **35%**



A noise reduction of  
**10dB**  
can save up to  
**€1,600**  
per employee per annum

# Mitigating noise pollution

Internal and external noise can distract employees – making it harder to concentrate and deliver effective performance. Noise is defined as any unwanted sound that disrupts normal cognitive processes. Noise pollution is a significant cause of reduced employee performance in offices.

## **When not adequately managed, noise pollution can cause:**

- Increased risks of hypertension and elevated blood pressure.
- More distractions in offices, leading to reduced job performance levels.
- For every 1dB of excessive noise, performance will decrease by 0.3 percent in offices.

## **According to the research, improved indoor acoustics in workplaces help to:**

- Increase the ability of workers to focus on complex tasks by 48 percent.
- Reduce error rates by at least 10 percent while executing daily tasks.
- Alleviate the effects of stress by at least 27 percent.

Stone wool insulation has natural sound-absorbing properties that help reduce the negative impacts of noise in buildings. Business owners and property managers can install stone wool insulation in floors, walls, ceilings, and roofs to manage sounds travelling throughout the building. [Rockpanel façade solutions](#) can also help to manage the effects of external noise while [Rockfon ceiling tiles and panels](#) can absorb noise inside the building and reduce overall noise levels.

# Enhancing the look and feel of the office environment

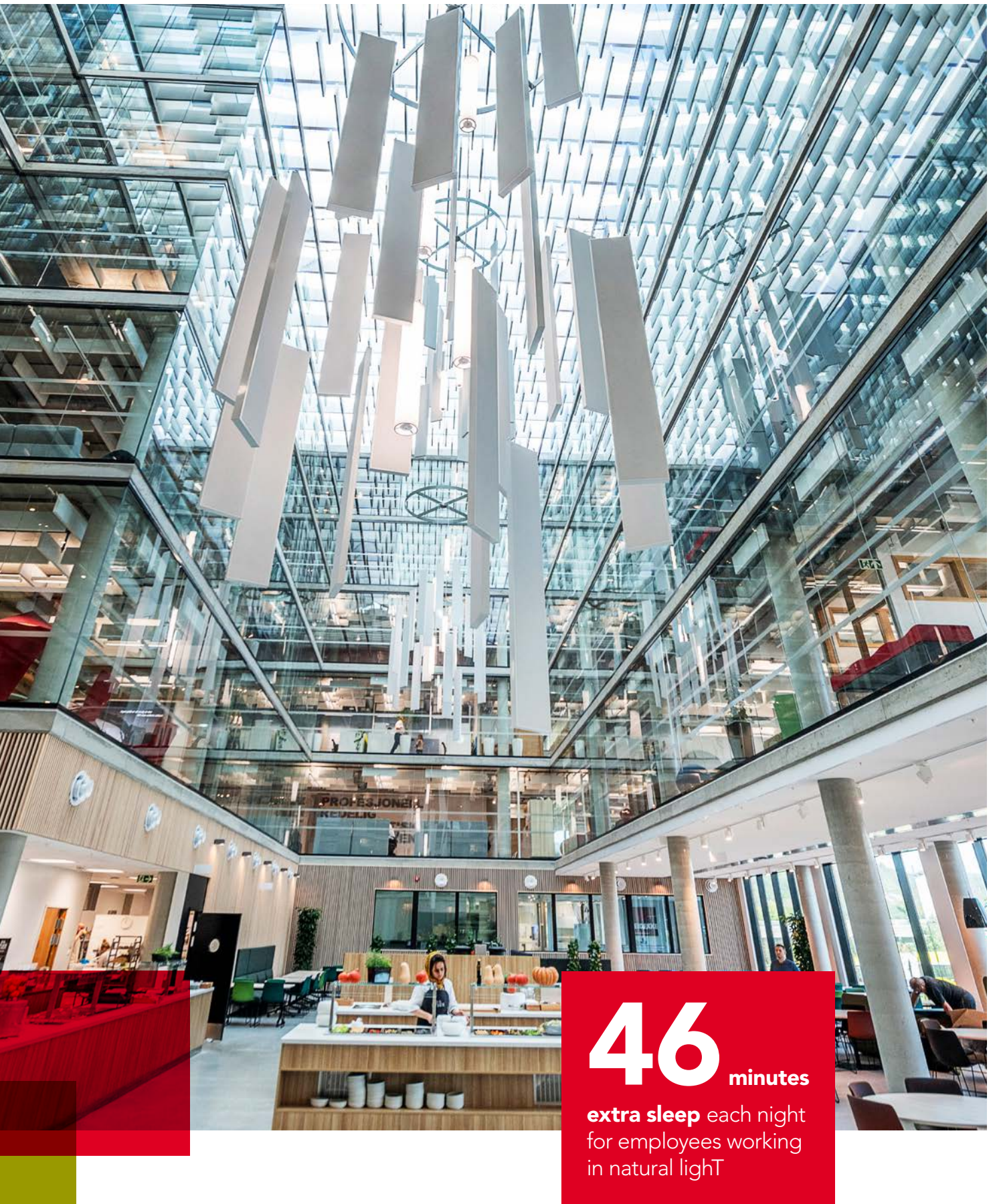
Increasing natural sunlight and generally improving the aesthetics of a workplace can also improve employee performance. Maximising the availability of natural light also influences employee productivity, with research showing that employees who work close to windows sleep for 46 minutes more on average than their colleagues.

## **The benefits available from accentuating these features include:**

- An increase of 0.8 percent in worker performance when lighting improves by 100 lux.
- Natural sunlight can lead to a 10 percent improvement in employee performance, and according to one study, reduce sick-leave by 6.5 percent.
- Better workplace satisfaction from plants in the office and improved air quality that leads to greater productivity.

[Rockfon panels can](#) help reflect light in an office and reduce the effects of elevated noise levels. Additionally, these tiles and panels can help to revive offices with an aesthetically-pleasing interior with a variety of shapes and colours to suit any environment. To improve the overall thermal performance of office buildings, [stone wool façades](#) can help revitalise the exterior of office buildings, allowing owners to maintain a [healthy and comfortable indoor environment](#) without compromising on their brand or corporate image.





**46** minutes

**extra sleep** each night  
for employees working  
in natural light

# Solutions for a better office environment

## 1. Acoustic baffles

Well-suited for open spaces or near communal areas that require extra sound absorption, Rockfon acoustic baffles offer superb sound-reducing abilities whilst also being aesthetically-pleasing. The baffles come in almost any shape, size, colour, and texture, offering complete design freedom for your office.

## 2. Internal wall insulation

Internal wall insulation will help maintain thermal comfort and separate hot and cold areas. In addition to increasing thermal comfort, reducing room-to-room noise is important around meeting rooms and when separating communal areas from workspaces. Insulating internal walls using stone wool insulation will help reduce inter-room noise pollution and maintain a quiet working environment.

## 3. Ceiling tiles

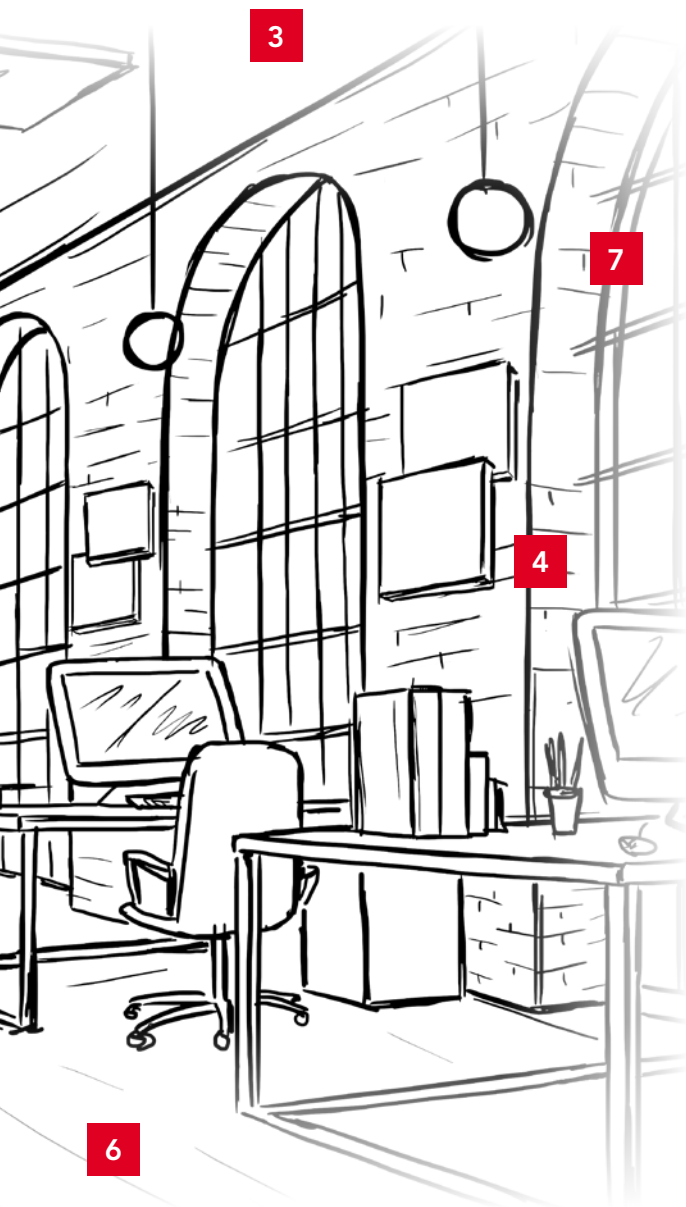
Installing stone wool ceiling tiles will help reduce noise, increase natural sunlight, and reduce glare, making for a more comfortable indoor environment. In fact, stone wool ceiling panels reflect up to 86% of available light, significantly improving both productivity and wellbeing for employees, whilst reducing the need for artificial lighting. Rockfon ceiling tiles can be installed both directly on your ceiling in a suspended grid and even offers solutions for exposed ceilings.

## 4. External wall insulation

Maintaining a stable and comfortable indoor temperature starts with insulation. Installing external wall insulation will help reduce heat transfer between the office space and the outside environment, helping employees stay cold in summer and warm in winter. Stone wool's natural ability to 'breathe' will further help maintain stable indoor humidity, making for better indoor air quality. Finally, stone wool insulation's sound absorbing qualities will help reduce outside noise.







## 5. Acoustic walls panels

In spaces where there are a lot of hard surfaces (glass, steel, concrete) or where other solutions are impractical, it can be necessary to install additional sound-absorbing solutions. Rockfon wall panels offer an aesthetically pleasing way to reduce noise in office spaces and can easily be installed directly on any wall type.

## 6. Floor and ceiling insulation

Insulating between storeys is an important element of creating a comfortable and safe office environment. The added insulation will help reduce noise travelling between floors, improve thermal comfort, and significantly improve fire safety. Stone wool's fire resilient properties make it a great fire barrier, helping to contain a fire to where it started and allowing employees to evacuate.

## 7. Façades

If you are looking to increase thermal comfort and reduce outside noise pollution, whilst at the same time giving your building a great new look, then Rockpanel façade cladding and ROCKWOOL façade insulation is the way to go. The stone wool façade panels give you complete design freedom, have very low maintenance costs, and are easy to install, whilst the underlying insulation ensures optimal thermal and acoustic performance.

## 8. Roof insulation

Hot air rises; it's the same principle that let's hot air balloons fly and also applies to the air in buildings. Maintaining a stable and comfortable indoor temperature without spending huge amounts on heating or air conditioning requires a well-insulated building envelope. However, because the heat goes up, the roof is the first place to look when you're looking to improve thermal comfort (and lowering your energy bill).

# Maximising employee performance with healthier buildings

Investing in the indoor comfort of offices has clear benefits in terms of the productivity, health and well-being of employees. Studies show that the large-scale renovation of offices provides a substantial return on investment through increased productivity, fewer absentee days and reduced employee turnover.

The solutions to tackle the challenges faced by modern offices already exist today. At ROCKWOOL, we harness the power of stone to deliver unrivalled acoustic and thermal performance. On the following page you can explore two of our best case studies on improving office comfort, or you can check out the links below to learn more about our solutions.

## Want to learn more?



### Boosting business with acoustics

The impact of noise and what you can do about it

[Download guide](#)



### Wellbeing in the workplace

How your environment can make you better

[Read more](#)



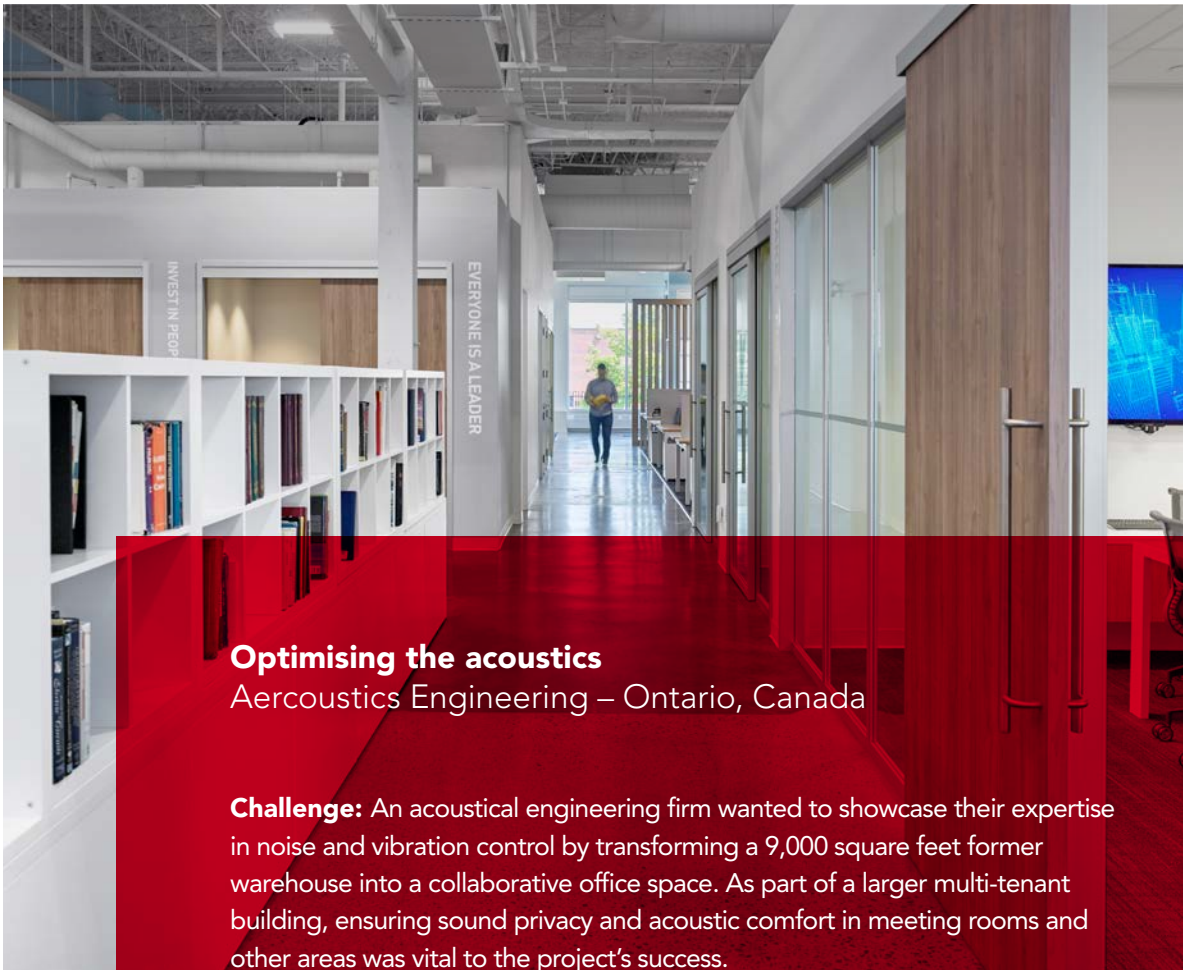
### Looking for a sound future?

Do you know the truth about how noise affects us?

[Read more](#)



# Case studies



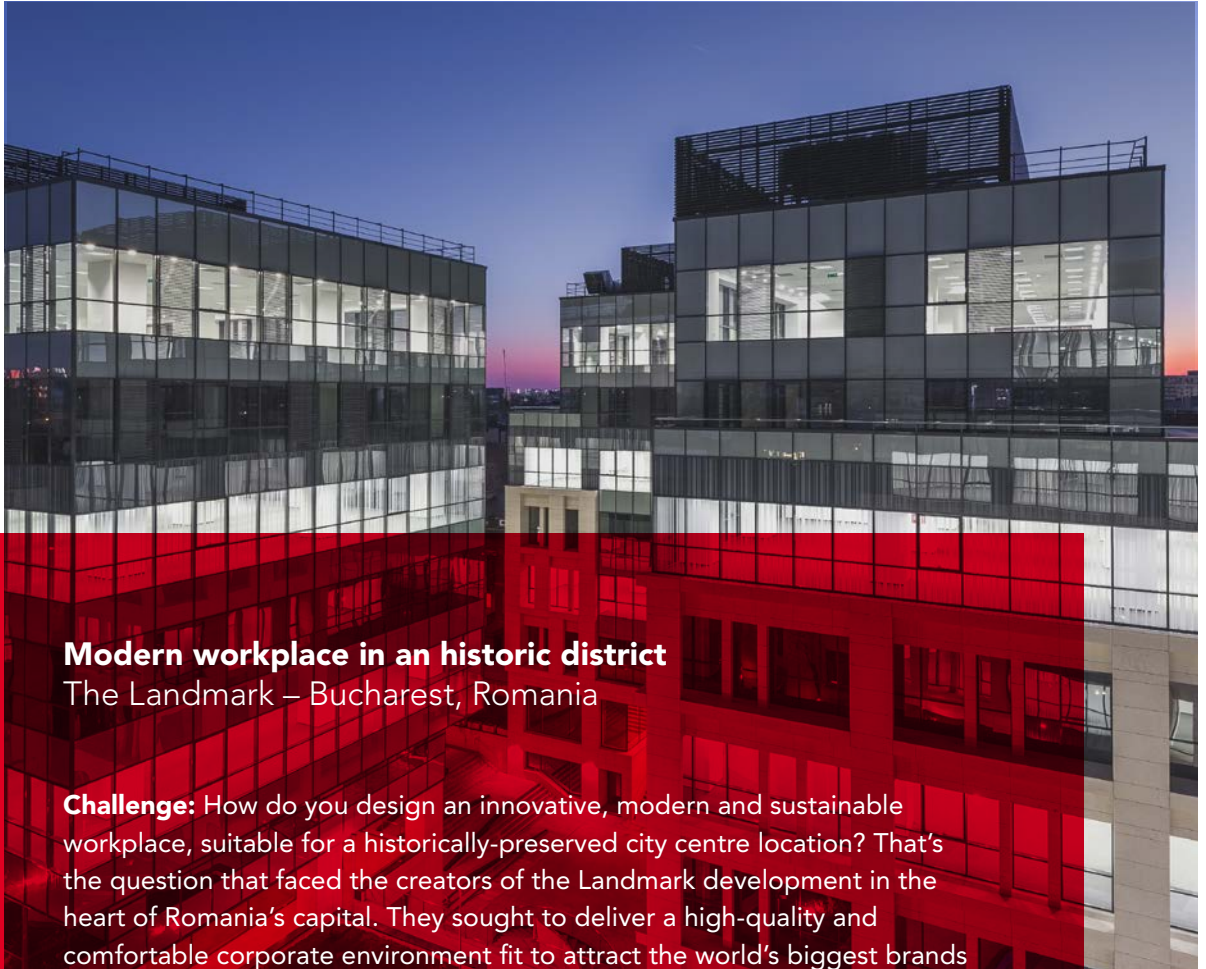
## Optimising the acoustics

Aercoustics Engineering – Ontario, Canada

**Challenge:** An acoustical engineering firm wanted to showcase their expertise in noise and vibration control by transforming a 9,000 square foot former warehouse into a collaborative office space. As part of a larger multi-tenant building, ensuring sound privacy and acoustic comfort in meeting rooms and other areas was vital to the project's success.

**Solution:** Aercoustics Engineering chose Rockfon ceiling tiles – products that effectively blocked and absorbed sound without compromising on the aesthetic goals of the project. In addition to optimising acoustics, the bright and lightly textured panels helped reduce the need for electric lighting by reflecting up to 85 percent of the available light and thereby maximising the use of natural light. Made entirely from stone wool, the Rockfon tiles also helped secure a healthier and safer working environment by delivering excellent fire safety and hampering mould and bacterial growth. The result was a dynamic and comfortable office environment that looks great, promotes wellbeing, complements the company culture and demonstrates their technical expertise to clients and visitors.

[Read the full case study](#)



## **Modern workplace in an historic district** The Landmark – Bucharest, Romania

**Challenge:** How do you design an innovative, modern and sustainable workplace, suitable for a historically-preserved city centre location? That's the question that faced the creators of the Landmark development in the heart of Romania's capital. They sought to deliver a high-quality and comfortable corporate environment fit to attract the world's biggest brands and companies – putting sustainability and energy-efficiency at the forefront of the business agenda.

**Solution:** The Landmark's builders selected ROCKWOOL dual density insulation to provide year-round thermal comfort, despite Bucharest's varied seasons. A sustainable solution, this reduces energy bills, making it more attractive and cost-effective for tenants. Stone wool insulation has allowed The Landmark's creators to deliver an attractive and high-end development that enriches the local architecture and regulates temperature, noise and fire. The building has now achieved a BREEAM "Very Good" rating, truly proving the exceptional indoor comfort.

[Read the full case study](#)



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