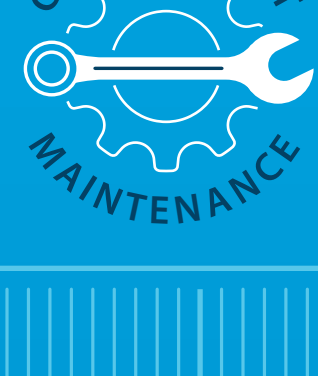
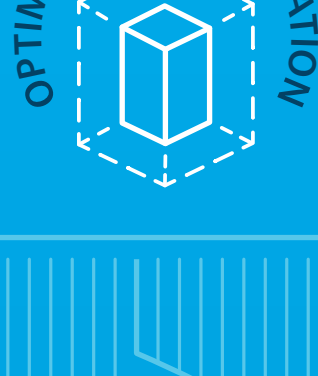


# SMART BUILDINGS

## What does the workplace of the future look like?

As countries and corporations step up efforts to reduce their carbon footprint,<sup>1</sup> there's a growing desire to decarbonise a major contributor to climate change – real estate.<sup>2</sup> Advances in technology are driving a shift towards 'smart buildings', helping accelerate the shift to net zero.<sup>3</sup>

### Key advantages of a smart office building<sup>4</sup>

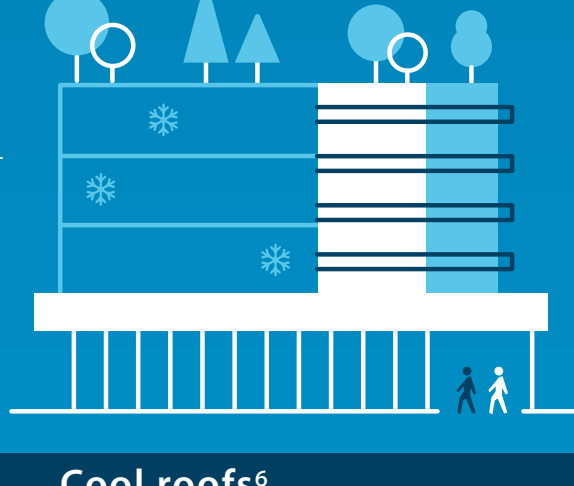


### THE GREEN EXTERIOR

#### Green roofs<sup>5</sup>

**25** PER CENT

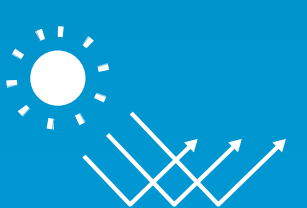
Estimated reduction in cooling costs from installing a green roof



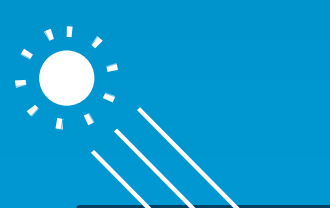
#### Cool roofs<sup>6</sup>

Require little to no maintenance and keep buildings cool by reflecting more of the sun's rays compared to conventional roofs.

**65** PER CENT



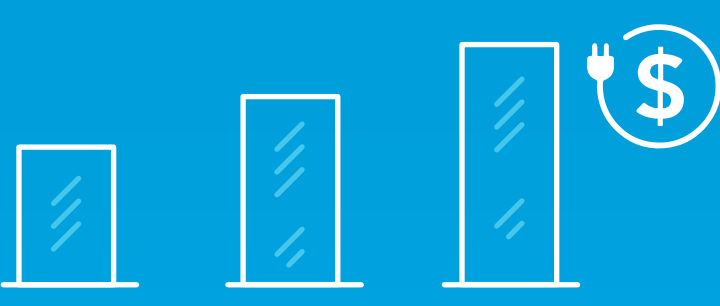
**15** PER CENT



#### Smart glass windows<sup>7</sup>

**\$US321.5 billion**

Total savings by 2050 from using smart glass windows, which use artificial intelligence to automatically control heat and glare<sup>8</sup>



### THE EFFICIENT INTERIOR

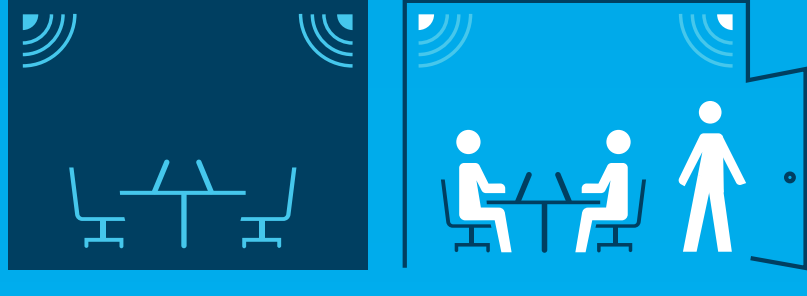
#### HVAC systems

Responsible for up to 70% of a building's energy usage, HVAC systems will increasingly be smart and deploy features such as ventilation calibrated by occupancy rates<sup>9</sup>



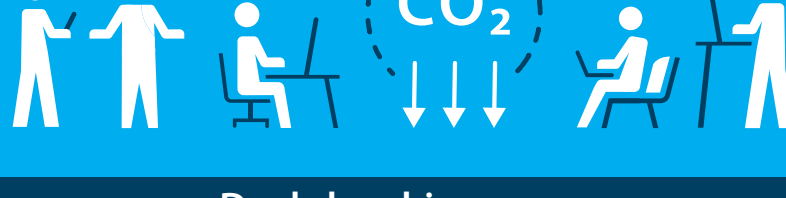
#### Occupancy sensors

Detect the presence of people to aid the efficient use of lighting and air-conditioning



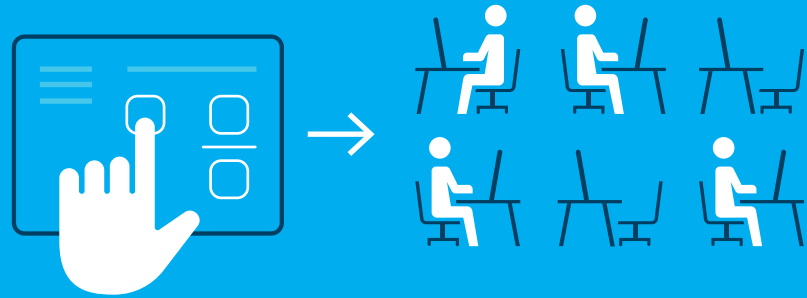
#### CO<sub>2</sub> sensors

Enhance indoor air quality by controlling levels of CO<sub>2</sub>, which studies have shown can adversely impact productivity



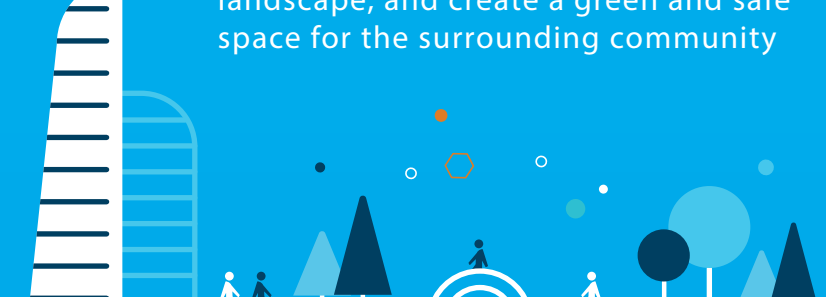
#### Desk-booking apps

Provide real-time information on workspace availability to aid the smooth transition to a hybrid, blended workspace<sup>10</sup>



### BUILDING RESILIENCE IN THE COMMUNITY

Smart buildings integrate natural features into their design to preserve the landscape, and create a green and safe space for the surrounding community



#### Seamless connectivity

Encouraging the use of public transport to reduce the impact of personal vehicles on the environment<sup>11</sup>

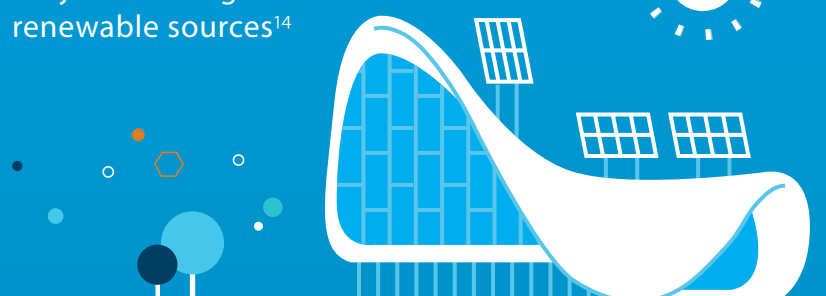


#### Smart parking<sup>12 13</sup>

<b>Dynamic guidance</b> 	<b>Heightened security</b> 	<b>Vehicle-employee schedule matching</b> 
<b>Automated ticketing</b> 	<b>EV-charging stations</b> 	<b>Permeable tarmac for improved drainage</b> 

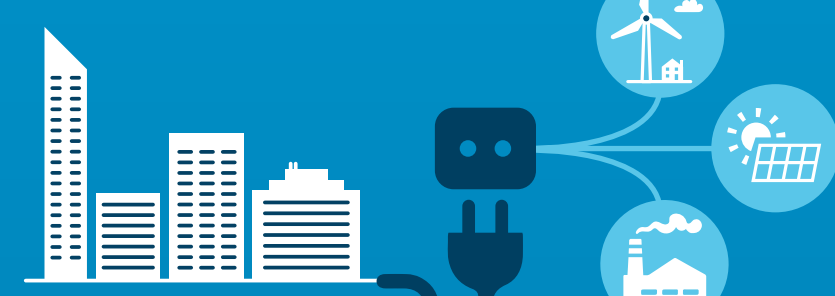
#### Energy self-sufficiency

Smart office buildings generate the energy they need using renewable sources<sup>14</sup>



#### Grid-interactive

Constant communication between occupants and energy suppliers reduces power on the grid and aids efficient distribution of power<sup>15 16</sup>



### MAKE THE FUTURE COUNT TOGETHER

The ANZ Finance & Treasury Forum is back in 2022 – and back in person. Held in Singapore on October 20, the forum will bring together some of the region's most compelling thought leaders to discuss how organisations are **making the future count together** on the path to net-zero carbon. As the threat to natural capital and biodiversity becomes ever clearer in a post-pandemic world, the forum will explore key topics of global importance across geopolitics, sustainability, and the technology that will help bring your business into the future. ANZ Institutional Insights will provide coverage and insights into the key themes from the forum in the lead up to the event - and beyond.

<sup>1</sup> <https://sciencebasedtargets.org/net-zero#:~:text=Net%2Dzero%20has%20rapidly%20moved,to%20net%2Dzero%20by%202050.>  
<sup>2</sup> <https://www.facilitiesnet.com/buildingautomation/article/How-Digital-Twins-Technology-Enables-Smart-Buildings-Smart-Cities-19488>  
<sup>3</sup> <https://www.prnewswire.com/in/news-releases/building-automation-system-market-estimated-to-garner-194-864-1-million-and-grow-at-10-0-cagr-in-the-2022-to-2030-forecast-period-report-300-pages-by-research-dive-846590758.html>  
<sup>4</sup> <https://www.metrikusio.com/blog/what-is-smart-building-how-can-it-benefit-you>  
<sup>5</sup> <https://gba.org/resources/green-building-methods/exterior-solutions/green-roofs/>  
<sup>6</sup> <https://gba.org/resources/green-building-methods/exterior-solutions/cool-roofs/>  
<sup>7</sup> <https://gba.org/resources/green-building-methods/exterior-solutions/energy-efficient-windows/>  
<sup>8</sup> <https://www.energy.gov/eere/articles/does-national-roadmap-grid-interactive-efficient-buildings#:~:text=By%202050%2C%20smart%20glass%20can,while%20keeping%20the%20weather%20outside.>  
<sup>9</sup> <https://serraview.com/smart-hvac-sensor-technology-smart-buildings/>  
<sup>10</sup> <https://peoplemanagingpeople.com/tools/best-hot-desk-booking-software/>  
<sup>11</sup> <https://www.worldgbc.org/how-can-we-make-our-buildings-green>  
<sup>12</sup> <https://rentcubo.com/features-of-smart-parking-system/>  
<sup>13</sup> <https://hesion-park.com/en/news-2/le-smart-parking-cest-quoi-exactement/>  
<sup>14</sup> <https://www.rolandberger.com/en/insights/Publications/Green-offices-are-the-future-of-today.html>  
<sup>15</sup> <https://new.siemens.com/global/en/products/buildings/contact/whitepaper-grid-interactive-building.html>  
<sup>16</sup> <https://www.energy.gov/eere/articles/does-national-roadmap-grid-interactive-efficient-buildings#:~:text=By%202050%2C%20smart%20glass%20can,while%20keeping%20the%20weather%20outside.>