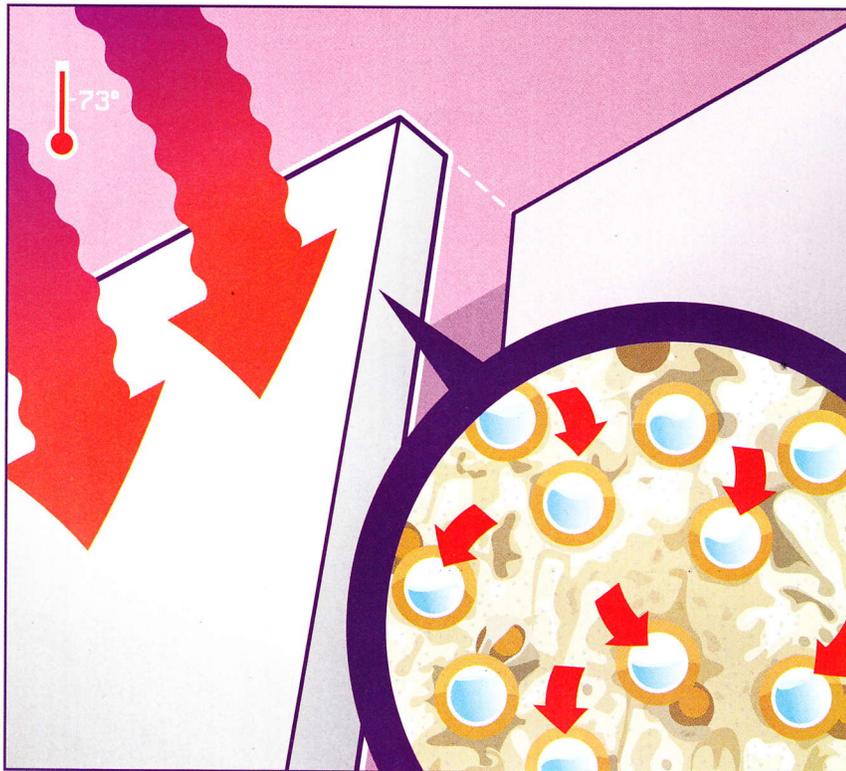


Material World

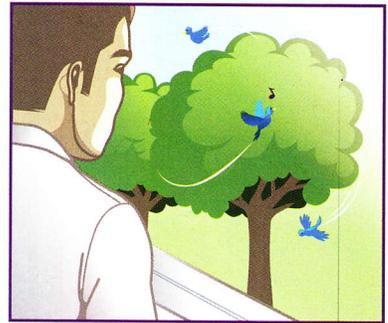
Breakthroughs in materials science mean greener, cleaner, and safer spaces. We take a closer peek at three that amaze.

BY RACHEL ARNDT



Heat-Releasing Walls

To keep a room cool, just let the walls melt. That's the trick with National Gypsum's Thermalcore, wall panels that absorb and release heat to maintain a comfortable ambient temperature without air-conditioning. At the core of each panel are paraffin-wax capsules made by BASF. **When the temperature climbs above 73 degrees, the paraffin melts**, drawing in heat and slowing the rise—much as a melting ice cube “absorbs” the heat of warm water to cool it. If the room dips below 73 degrees, the wax turns to a solid, releasing the heat it absorbed earlier.



Bird-Friendly Windows

More than 100 million birds are killed each year by **smacking into glass**, because they can't discern the difference between a window's reflection and wide-open sky. It's not because birds have bad vision. In fact, birds can see both the spectrum that humans perceive and shorter-wavelength ultraviolet light. Arnold Glas adapted a solution from nature to better its windows: Certain spiders' webs have natural ultraviolet properties that are visible to birds, deterring wings from hitting webs. The company's Ornilux Bird Protection glass has a coating with UV patterns that are **transparent to humans but visible to birds**. During testing, bird injuries dropped by 75%.

Liquid Glass

By extracting silicon dioxide from sand and combining it with water or ethanol, German company Nanopool has essentially turned glass into a liquid that can be **sprayed on anything** from desks to clothes to statues, making surfaces antimicrobial and easy to clean. Quantum LiquiGlas is only 100 nanometers thick (about 500 times thinner than a human hair) and **resistant to bacteria** because the material's chemical properties make cell growth difficult. LiquiGlas is already being used on hospital surfaces in the U.K. and at a meat-processing factory in Germany. It will hit the U.S. market later this year.

