

BIOMIMICRY

Biomimicry is an approach to innovation that seeks sustainable solutions to human challenges by emulating nature's time-tested patterns and strategies.

“You could look at nature as being like a catalog of products, and all of those have benefited from a 3.8 billion year research and development period. And given that level of investment, it makes sense to use it.”

-Michael Pawlyn

Solutions to global challenges are all around us

Explore how biomimicry is shaping sustainable design and innovation in a variety of fields.

Energy

Architecture

Transportation

Agriculture

Medicine

Communication

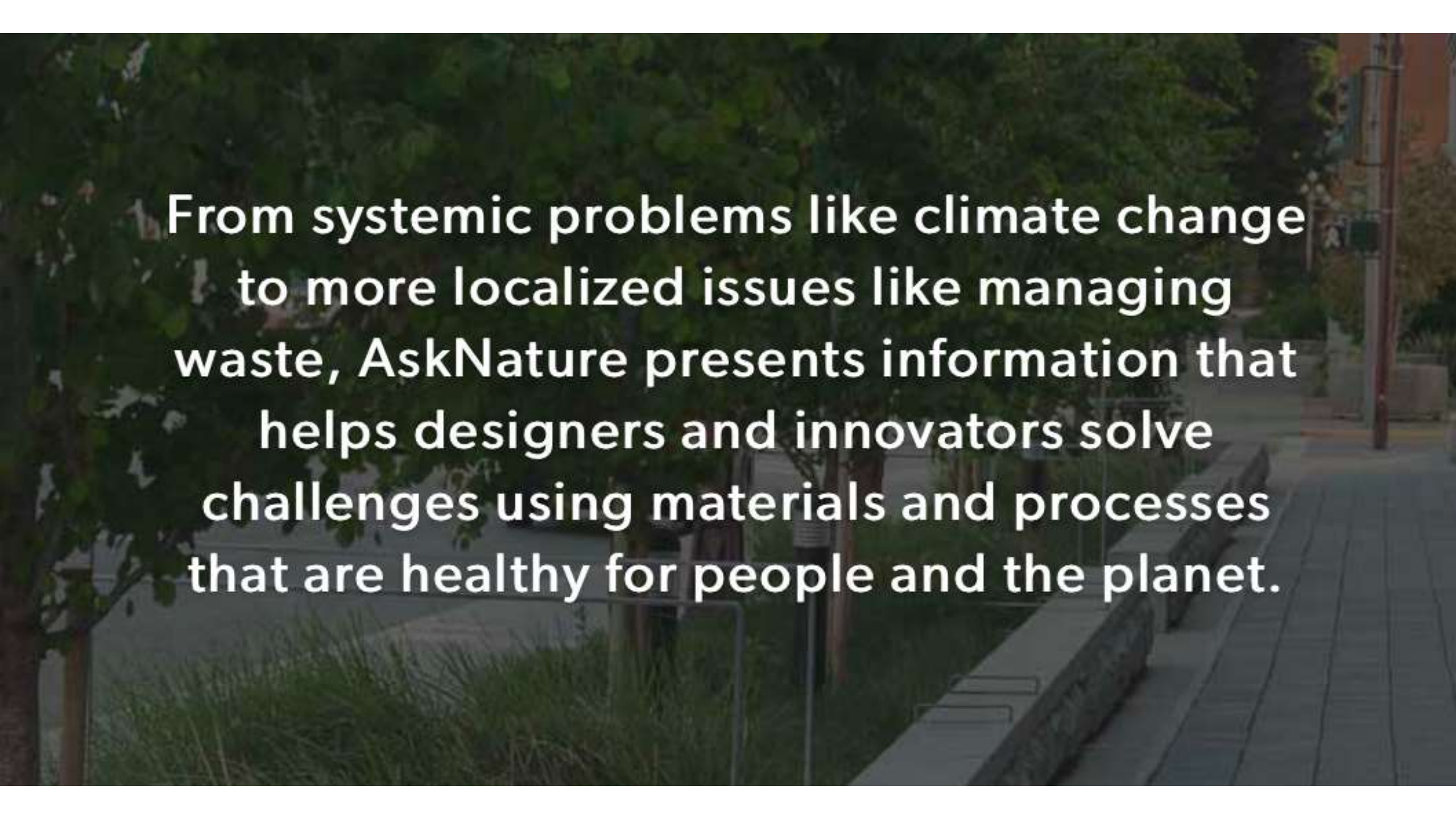




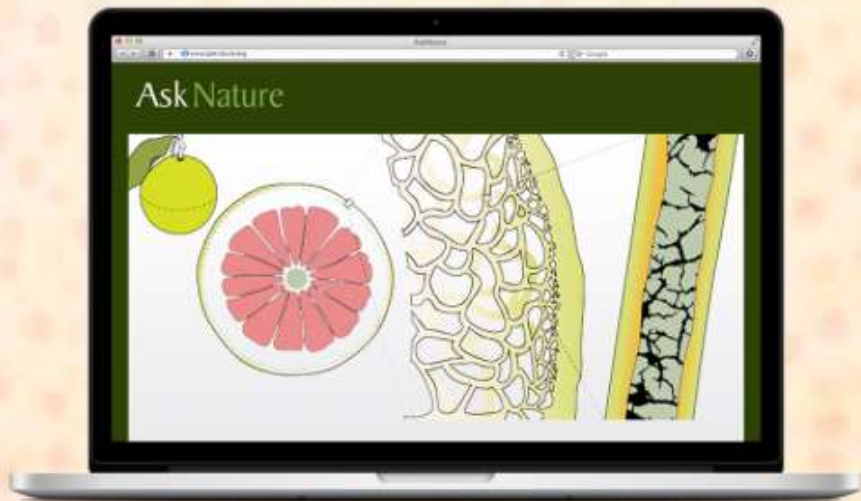
Innovators are full of questions.

Nature has answers.

AskNature provides innovators with the world's most comprehensive catalog of nature's solutions to human design challenges. This curated online library features free information on over 1,800 (and growing!) natural phenomena and hundreds of bio-inspired applications.



From systemic problems like climate change to more localized issues like managing waste, AskNature presents information that helps designers and innovators solve challenges using materials and processes that are healthy for people and the planet.



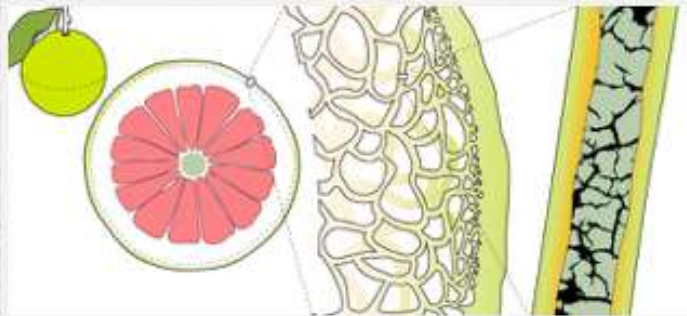
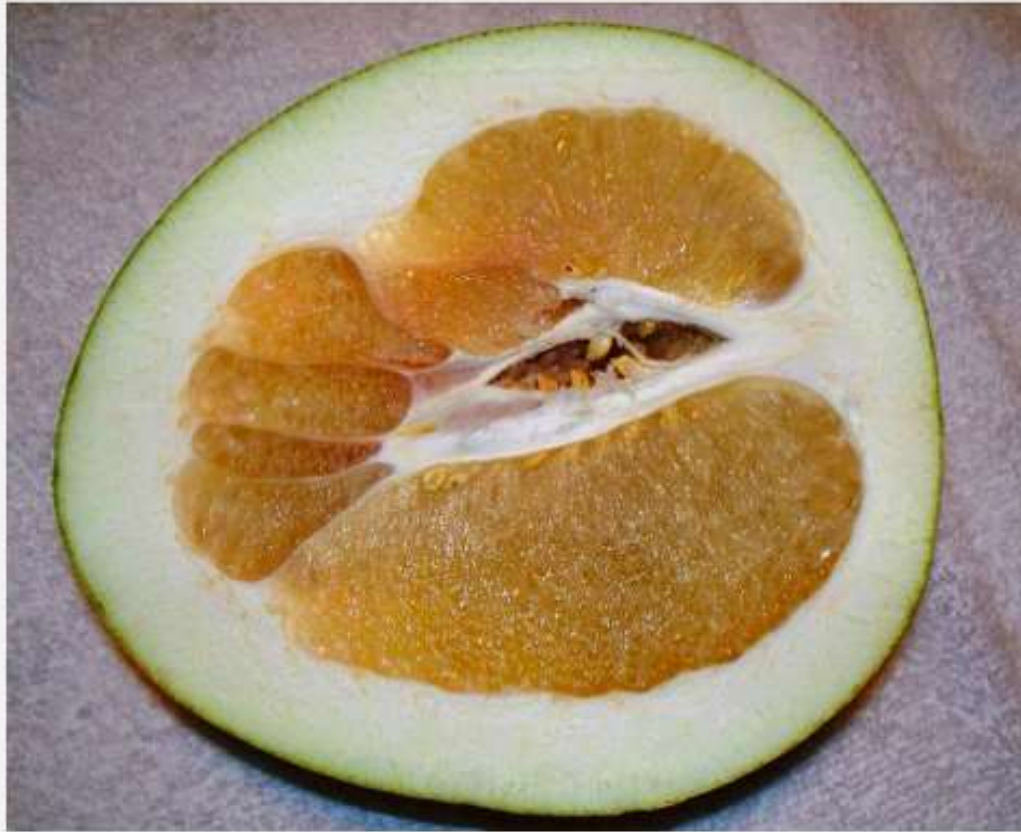
Did you know?

Pomelo fruit can strike the ground from heights over 30 feet without showing signs of damage, thanks to a composite and hierarchically organized peel structure. This structure inspired the recent development of an aluminum composite material being considered for use in safety applications.

[LEARN MORE AT ASKNATURE.ORG](https://www.asknature.org)

What will you AskNature?

The pomelo fruit has excellent damping properties due to the hierarchical organization of its composite peel



“Natural materials often exhibit excellent mechanical properties. An example of outstanding impact resistance is the pummelo fruit (*Citrus maxima*) which can drop from heights of 10 m and more without showing significant outer damage. Our data suggest that this impact resistance is due to the hierarchical organization of the fruit peel, called pericarp.” (Fischer 2010: B658)

What will you AskNature?



How does nature prevent turbulence?

Serrated feather shapes allow owls to fly without creating turbulence or noise.

Mechanical engineers have emulated these shapes to design fans and turbines that are nearly silent.



How does nature optimize networks?

As slime mold spreads, it organizes into noded networks that efficiently connect its food sources. Planners and engineers are studying how slime mold might help optimize our own networks.



How does nature move efficiently?

Fish in schools save energy by swimming in vortices created by their neighbors.

Researchers are using similar principles to find optimal positions for tight arrays of vertical-axis wind turbines.