

The Shedding Building

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ME221 – Green Product Design

WHY do some animals shed their skin?

Snakes as well as other reptiles and mammals (humans included) shed their skin. Snakes shed their skin in one continuous piece about four to eight times per year, while humans shed small, dead skin cells throughout the day. Animals shed not only for growth but to get rid of dirt and parasites easily and effectively. The skin underneath is clean and strong. The shed skin and cells are discarded and degrade relatively quickly.

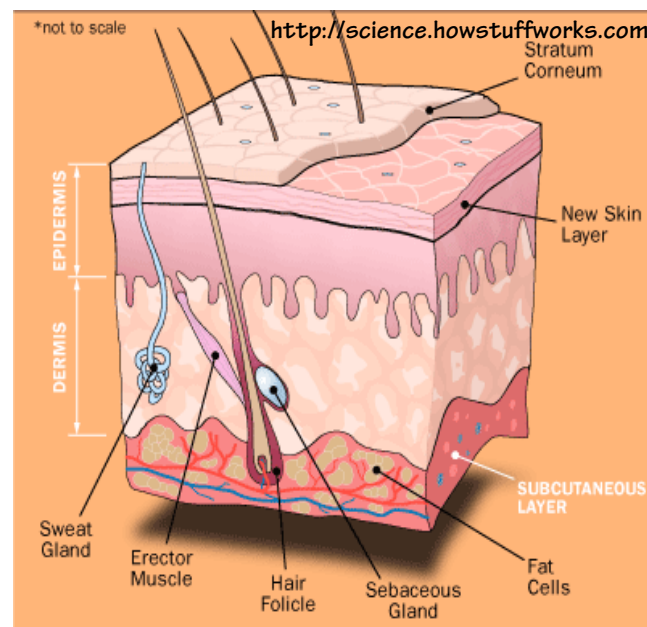


<http://www.dkimages.com/>

Above: Milk snake shedding its skin

Below: Human skin.

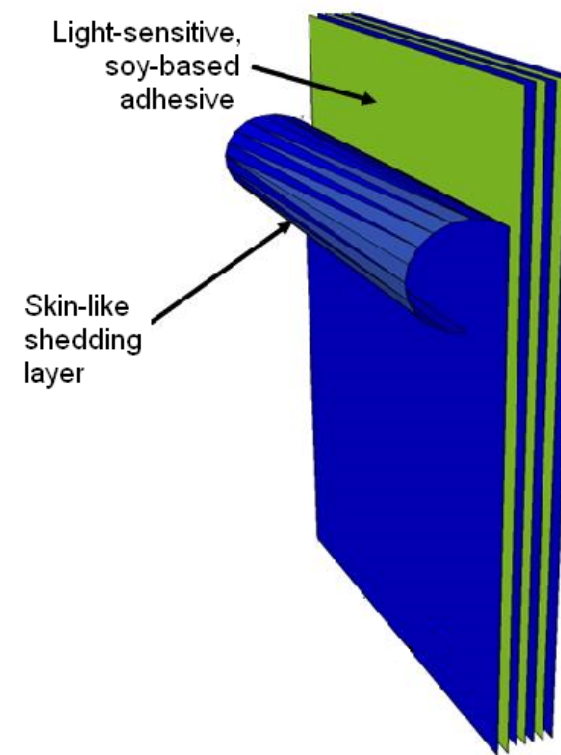
Bottom: Eastern King Snake skin



<http://www.snakesandfrogs.com/>

HOW can this mean energy savings for a building?

- New Smart Material (below) : Very thin, translucent, biodegradable, shed-able layers coupled with biodegradable, soy-based, light-sensitive adhesive, is applied to any exterior surface of a building similar to a gloss or top coat.
- Unique Adhesive: Light-sensitive property of the opaque adhesive allows it to slowly break down when exposed to light. The skin-like layer then begins to “shed” when the adhesive begins to degrade.
- The shed layer would be so thin that no assistance would be needed to remove it. It would essentially flake off and remove dirt and impurities with it, much human skin.



WHAT could the savings be?

Buildings often utilize hot water, high-pressure washers (below) with the aid of detergents (chemicals) to remove dirt and grime from the exterior of buildings (above). Pressure washers usually run on electricity, gas, or diesel. Factoring in the amount of surface area to be cleaned for large commercial buildings, pressure washers require a substantial amount of energy to help compress and heat the water for usage.

The shedding mechanism of the exterior eliminates the use of harsh chemicals and saves not only energy, but thousands of gallons of water.



<http://www.alklean.com/prwashrs.htm>