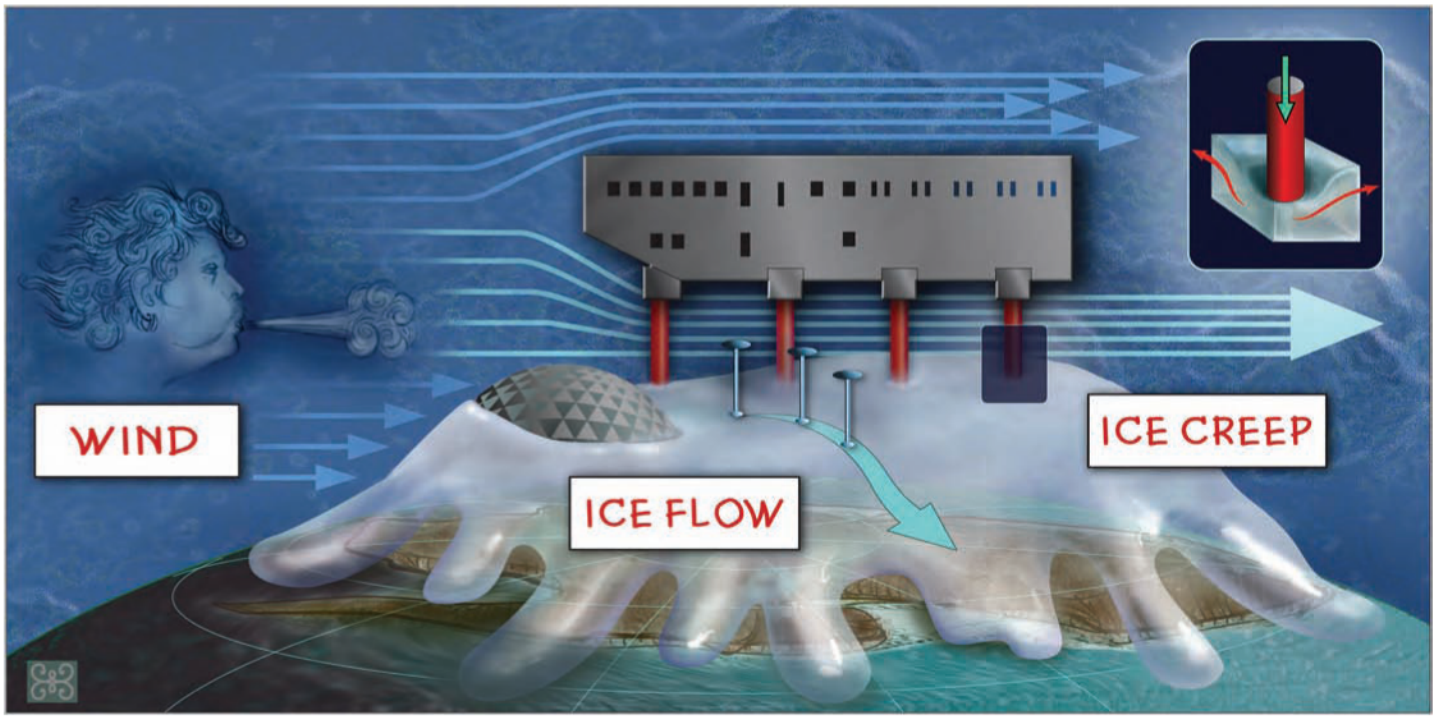
CHALLENGES THAT FACE SOUTH POLE ARCHITECTURE



WIND
* Constant winds result in snow pile-up on buildings.
*The new station faces into the wind, and is airfoil-shaped.
*The airfoil forces air into a compressed space where it accelerates.
*The fast wind scours out built-up snow.
*Years later, if snow still builds up, the building can be lifted two more stories on its columns.

ICE FLOW
*The station sits atop a 2-mile deep layer of ice.
*Each year, the geographic South Pole is marked.
*Ice (cold water), slowly drips down to the ocean with gravity.
*The trail of yearly South Pole markers shows that the ice moves 33'/yr.

ICE CREEP
*The weight of the building also causes the ice to move locally.
*Ice compresses and shifts away from sources of pressure.
*Resulting variable rates of sinking make keeping the building level a challenge.
*Architectural elements built into the design will help meet that challenge.

Credit: Zina Deretsky, National Science Foundation
For more information on the South Pole see:
http://nsf.gov/news/special_reports/livingsouthpole/index.jsp

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