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Let buildings breathe

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In a sizzling property market, architect Vinod Gupta has created one of India's coolest buildings, using wells, wind tunnels and sun screens to chill classrooms and slash energy costs. Thanks to his designs. Students in the new NIIT University located in Neemrana will mill around classrooms cooled to around 25 degrees Celsius (77 F) without air conditioners, especially at a time when desert state bakes at nearly double that temperature outside. The new NIIT university campus that has come up at Neemrana about 130 km from Jaipur on the Jaipur-Delhi national highway has been designed by architect Vinod Gupta and it is a case study for green learning.

Gupta has planned the buildings in such a way that one could feel comfortable without fan and air conditioners in peak summer. When the Neemrana would be sizzling at 45 degree temperature it would be possible to maintain the room temperature of 25 degrees in the building. This has become possible because of the network of earth air tunnels that have been laid like an underground maze. About 1.6 km of earth tunnels have been laid for the construction of the building. By the time the whole campus would be ready the tunnel's length would be 16 km.

The tunnels have created their own shade and micro climate that will make the environment cooler. Pipes of four feet in diameter have been laid 12 feet under the ground in between the buildings. The air that is pulled by the fans passes through precipitators to eliminate dust through shafts in the buildings and it eliminate the need for air conditioners.

According to Rajendra Powar the founder of the NIIT, the thermal capacity of the earth is such that the variations of the surface temperature do not penetrate much deeper than 0.5m and seasonal variations up to a depth of about 4 meters. Beyond this depth the temperature remains constant. The temperature of Neemrana at a depth below four meters remain constant at 24 degrees.

Architect Gupta informed that cost for laying the earth tunnel is approximately the same as air-conditioning . But taking long term interest the savings would be enormous and one can save 60-70 percent in cost of energy. Gupta has planned the campus in such a way that that the tall buildings are located right at the end with low frontage buildings in the front. NIIT university campus features rainwater harvesting facilities and water recycling systems that is 97 percent efficient ensuring the maximum reuse of precious natural resources for the benefit of all.

