

Concrete greenery device creates organic-inorganic harmony

Recently saw an ABC News report on scientists' discovery that large cities actually create their own weather. Society has, over a couple of centuries, built giant heat sinks that are turning on us, and it wasn't until now that we could prove it. The report quotes

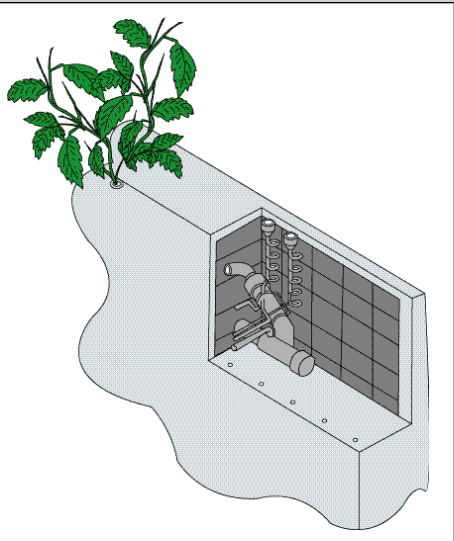


Fig. 1. Anchored to reinforcing steel in a cast-in-place concrete structure, a newly patented plant growing apparatus makes concrete truly "green" while increasing its strength.

NASA scientist Dale Quattrochi as saying recent data is "the quintessential smoking gun" proving the existence of artificial weather.

Thunderstorms and tornadoes are two of the phenomena cited as the result of massive amounts of heat absorbed during the day and released back into the atmosphere at night.

In an almost bizarre coincidence just 6 days after the story aired, an inventor from Taiwan received a patent for incorporating living plants into concrete structures that would help keep cities cool. Chun Pu Chen of Yung-Ho City, Taipei Hsien, Taiwan, received a U.S. patent for his cast-in-place "Planting Apparatus and Method for Green Plants on Reinforced Concrete Structures."

It isn't surprising that this inven-

tion comes from Taiwan. Easterners have a different cultural outlook on life and the world around them from that of Westerners. Among his reasons for inventing the apparatus, Chen wants it to "improve the actual quality of the environment, lower the reflection of radiation, reduce harmful rays, reduce pollution of air and noise, raise visual pleasure with less space and at the lowest cost, receive the most greening reaction, and leave a prosperous land for our next generations by maintaining its good health.

"This invention and technique combine the reinforced concrete structure with greenery under the condition that no adverse effect occurs on the original functions and appearance of the reinforced concrete structure. It also increases the strength of a reinforced concrete structure so that the green plant can find a space inside the structure to grow and to green the structure."

As shown in Figure 2, the planting area is a vertical cylindrical plastic hollow shell supported by an encircling iron ring (1). A U-shaped iron bracket forms an anchor (2) workers use to tie the apparatus to the reinforcing steel inside the concrete structure so the apparatus will not float during the pouring of concrete.

The planting area is filled with soil that sits on a high-density sponge. A groove on the internal wall of the cylinder acts as a capillary, drawing water from the sponge, refreshing the root zone with water and nutrients.

Each planting area is mounted on an inverted T-shaped base equipped with a water-level adjustment tube (3). This allows the water to reach a level such that it won't fill up the tube and drown the plant,

yet allows water from the soil to enter the device. A cap (4) reduces evaporation of the water in the soil around the plant.

A second similarly shaped tube (5) allows air to enter the device for aeration of the water and soil. This not only aerates the soil, but it also reduces the chances of stagnation of the water and detrimental fungus growth.

Two serpentine tubes with funnel ends are the device's means of collecting water from rain or watering. These, coupled with the water-level adjustment tube, conduct the water to the T-shaped base cylinder.

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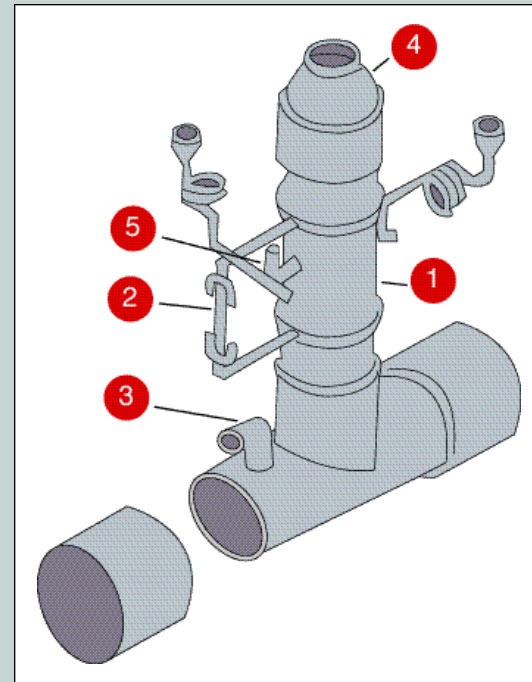


Fig. 2. The vertical planting area (1) is filled with soil and a sponge and attaches to reinforcing steel with a steel bracket (2). The vertical cylinder fits into a base cylinder equipped with a tube (3) that keeps out excess water. A cap (4) keeps water from evaporating, and another tube (5) provides soil aeration.