

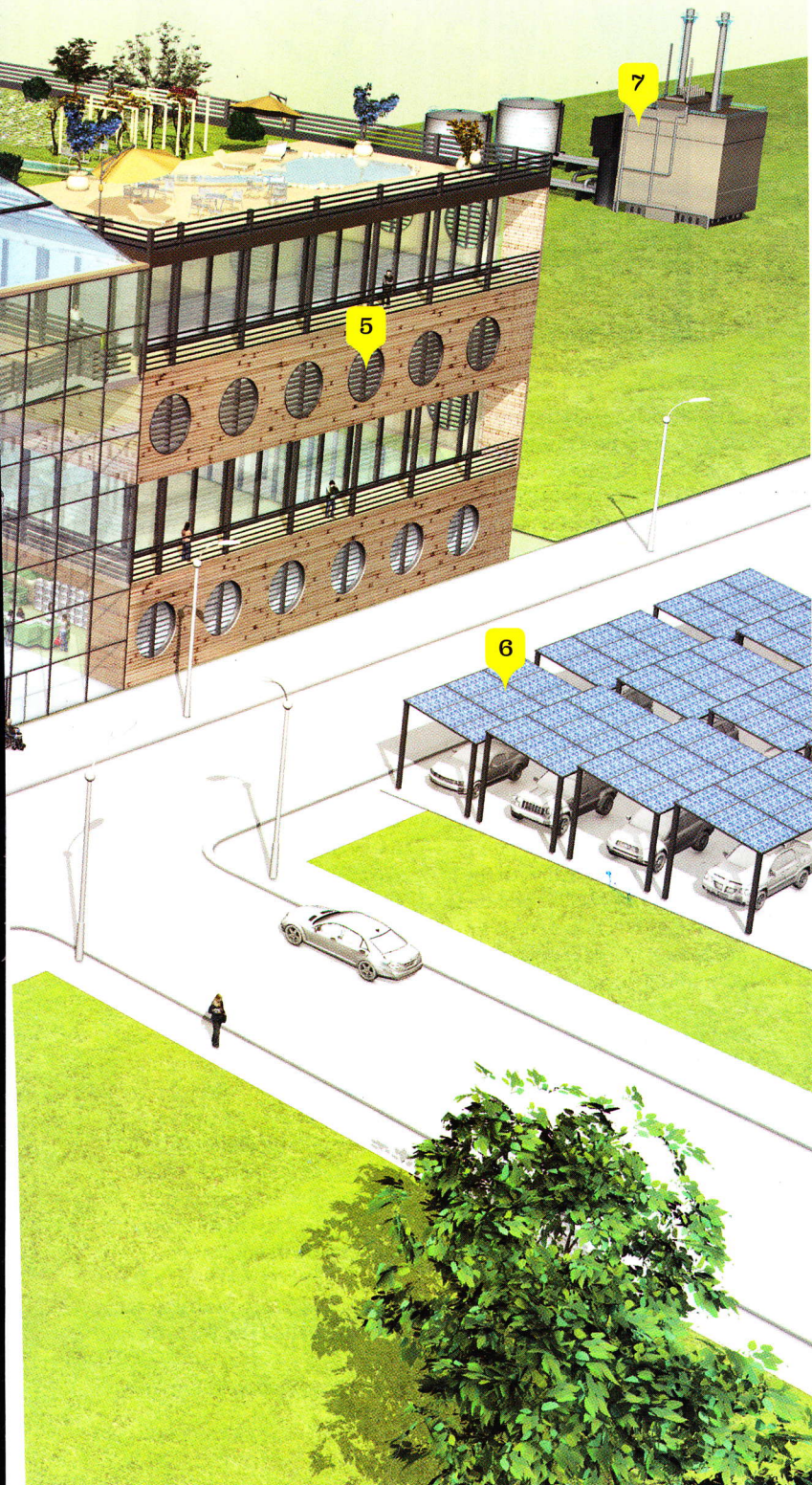
First, Do No Harm

The hospital of the future is designed not just to heal the sick but also to help sustain the environment.

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HOSPITALS HAVE a brutal effect on the earth. They consume twice as much energy as typical office buildings and operate 24/7. Often, they're little better for people: The \$41 billion health-care-construction industry habitually neglects design elements such as access to daylight that have been shown to boost healing. "Hospitals are the most challenging building type to make sustainable, but they also present some of the biggest opportunities for designers," says Jean Mah, a principal at architecture firm Perkins + Will. "The potential benefits to people and the environment are so high." The U.S. Green Building Council, spurred by designers, activists, and health professionals, is now developing LEED for Healthcare, a set of standards to help hospitals achieve sustainability. What might the hospital of the future look like? We drew up a prototype.



1. THE KITCHEN

New composting machines can reduce waste by breaking food down into air, water, and fertilizer for gardens. Costs can also be kept in line with Aramark's forthcoming computerized ordering systems, which provide up-to-date information on patients' status and dietary restrictions, so that food is prepared only as needed.

2. THE CAFETERIA

Natural materials and warm lighting—daylight filters in from the neighboring atrium—create a less stressful, more inviting environment for hospital staff as well as patients' friends and families. Meals are served in disposable containers made from biodegradable materials such as sugar cane, rather than Styrofoam.

3. THE LAUNDRY

Moving from disposable to reusable gowns cuts waste but creates laundry—and even a small hospital already has millions of pounds of sheets, towels, and scrubs to wash each year. The solution: industrial 80-foot-long tunnel washers, like those made by Jensen, that use just 1 gallon of water per load—and then recycle it.

4. THE ROOF GARDEN

Every hospital needs an oasis, but it's not just an aid to patients and visitors. A rooftop garden also helps regulate building temperature, providing an extra layer of insulation while absorbing rainwater to reduce the strain on overtaxed sewers.

5. THE WINDOWS

Operable windows and shading devices allow natural ventilation and reduce the need for air-conditioning.

6. THE PARKING LOT

Solar panels over the parking lot shade cars while harvesting enough energy to supply 50% of the hospital's electricity needs.

7. THE POWER PLANT

An ultra-efficient on-site power plant takes the hospital off-grid, rendering it blackout-proof. Designed by Burns & McDonnell, this natural-gas-burning model can meet all of a hospital's electric, medical-gas, and temperature-control needs while cutting 20,000 tons of earth-harming emissions yearly—equal to taking 3,600 vehicles off the road.

8. THE TELECONFERENCING CENTER

Doctors can follow up with patients in their homes via Cisco's teleconferencing technology, saving the time, expense, and emissions of a return visit to the hospital.

9. THE HOSPITAL BED

Stryker's "InTouch" bed combines high-tech features, such as a 24-language translation tool, with complete range-of-motion capability—a patient can lie completely flat or sit fully upright, a degree of control that research shows improves patient morale and promotes movement.

10. THE ELECTRONIC MEDICAL-DATA SYSTEM

Good-bye, clipboards! Infusion Development's Microsoft Surface health-care app allows physicians to access a full range of patient data. Videos and charts illustrating procedures can be used to inform patients and ease anxiety.

11. THE FAMILY AREA

Patient rooms should include adequate space for guests—a family's sustained presence in the hospital room can help speed recovery. Steelcase's pull-out sofa is made of recycled materials.

12. THE VIEW

Research suggests that patients with views and access to nature require fewer medications, experience less pain, and recover more quickly than patients without.