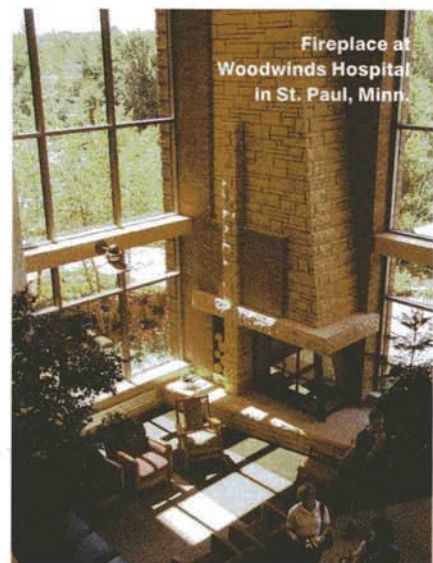


# A healthy future for healthcare building

How green building can make medical facilities more efficient, healthy, and profitable **By Scott H. Lawson**

**N**o one understands the importance of making healthy choices more than medical services professionals. So, it should come as no surprise that the medical industry is increasingly taking advantage of recent advances made in green building. The phrase 'green building' can mean a lot of different things, but everyone agrees on some basic principles. A definition from the California Environmental Protection Agency lays out the basics by pointing out that green facilities, "are designed to meet certain objectives such as protecting occupant health; improving employee productivity; using energy, water, and other resources more efficiently; and reducing the overall impact to the environment."



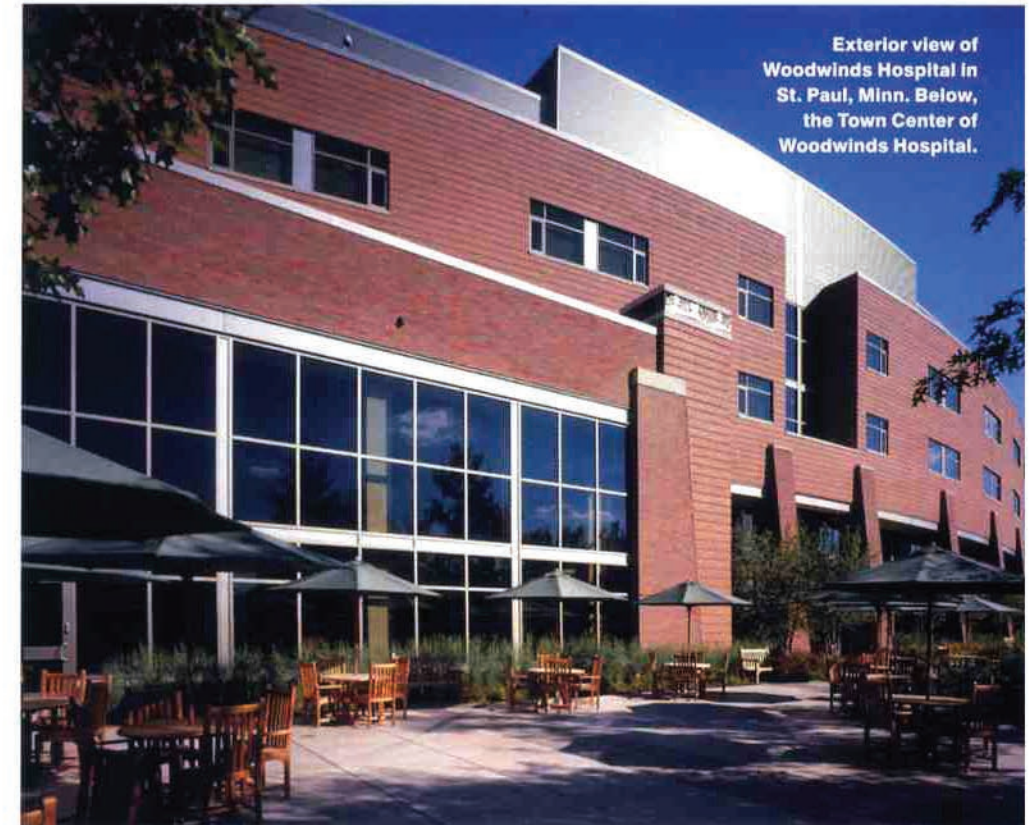
## Why go green?

In "Environment and Health: Sustainable Health Care and Emerging Ethical Responsibilities," an article that appeared in a 2001 issue of Canadian Medical Journal, professors Andrew Jameton and Jessica Pierce assert that medical professionals have an ethical responsibility to reduce the impact of healthcare on our shared environment. They cite a 1996 Institute of Medicine study by L.C. Chen that demonstrates, "about 25 percent of health problems are environmental in origin." Jameton and Pierce conclude the ethical need to 'go green' in healthcare is driven by three considerations.

"First, today's generations have responsibilities for the welfare of future generations...healthcare should accept a responsibility to meet current needs in ways modest and clean enough to be sustainable for centuries. Second, humans have a responsibility toward the natural world for the sake of both nature and ourselves...third, because about 80 percent of the world's wealth benefits only 20 percent of its people, the vast majority have very little. Poverty is one of the main factors contributing to poor health, and it reduces the ability of populations to cope with environmental decline," according to Jameton and Pierce.

In addition to the ethical case for environmental building, green building practices also contribute to a healthier staff and, consequently, an improved bottom line. Healthier workspaces can reduce environment-related illnesses by applying a number of commonly used green building methods, including increased ventilation, reduced air recirculation, improved filtration, ultraviolet disinfection of air, reduced office sharing, and reduced occupant density.

According to *Health and Productivity Gains from Better Indoor Environments and Their Implications for the U.S.* Department of Energy, a 2000 study by William J. Fisk of the Lawrence Berkeley National Laboratory in California, such improvements significantly lower the occurrence of four of the most common respiratory illnesses. The cost of treatment and lost work due to such illnesses is massive — 176 million days of lost work at a cost of \$70 billion each year. Such improvements in building design can also create a 9 to 20 percent reduction in cases of the common cold, translating into 16 to 37 million fewer cases



recovery time can also be reduced by an improved indoor environment. According to a survey of senior healthcare administrators conducted in January and February of 2007 by Turner Construction Company, The U.S. Green Building Council, and McGraw-Hill Construction, 47 percent of administrators reported reduced patient recovery time due to green building practices.

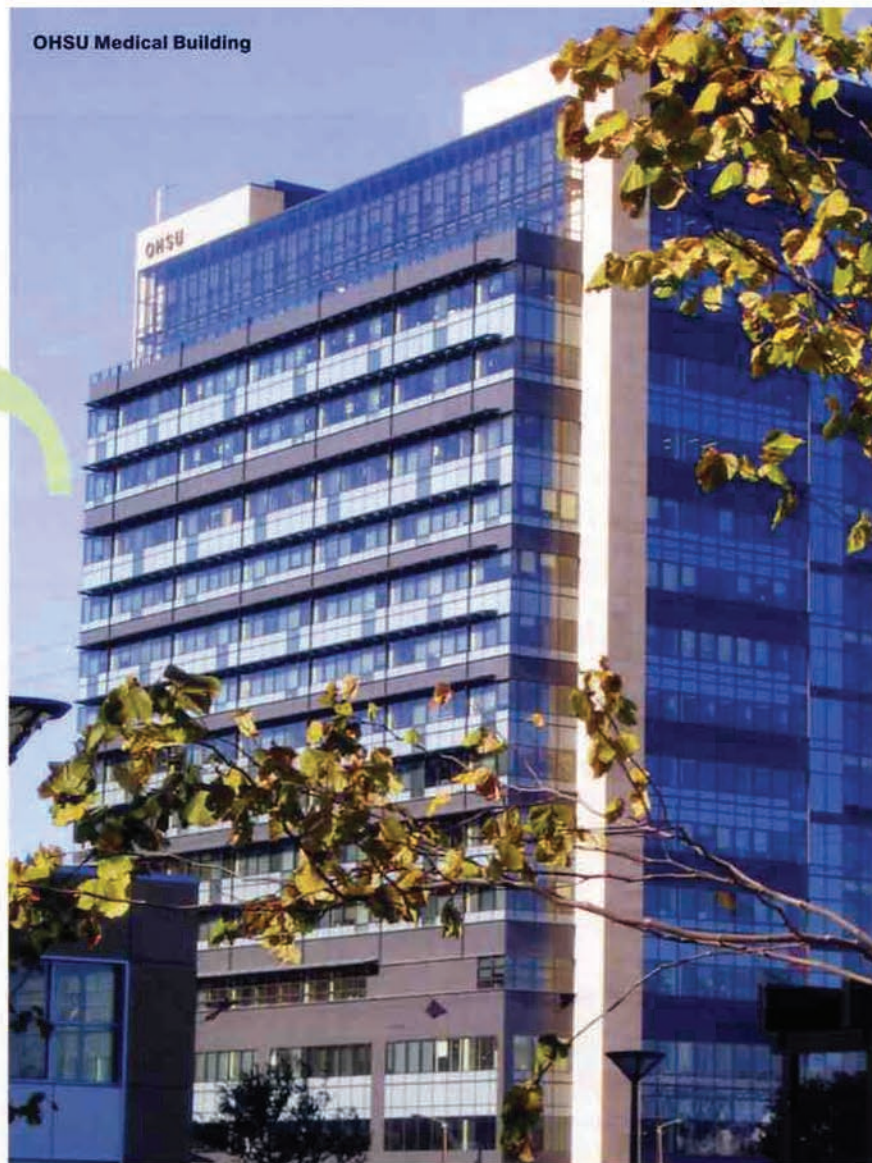
According to a 1998 study published by California's Center for Health Design, there are three primary ways in which the environment can influence a patient's outcome. First of these is the impact on medical care. An environment can help or hinder the actions of caregivers. Secondly, the health status of the patients' can be strengthened or impaired by existing conditions. Thirdly, environments can either protect patients or expose them to illnesses. For example, the circulation of ultra-clean air can prevent infections which are a result of treatment in a hospital or a healthcare service unit. This study also cites architect Derek Parker of Anshen + Allen in San Francisco. He has estimated the cost savings from better

annually. This annual reduction could save U.S. businesses as much as \$14 billion each year. As a further benefit, improved health generally increases worker and occupant progress and productivity, which ultimately stimulates a company's bottom line. Fisk estimates that companies could save a combined \$160 billion a year by improving indoor air quality regulations and standards.

## Green building can impact health

The effect of green building on employee health is not the only advantage for medical facilities. Patient re-

OHSU Medical Building



### Learn More

Andrew Jameton and Jessica Pierce  
Canadian Medical Journal, "Environment  
and Health: Sustainable Health Care and  
Emerging Ethical Responsibilities,"  
[www.cmaj.ca/cgi/content/full/164/3/365](http://www.cmaj.ca/cgi/content/full/164/3/365)

*Health and Productivity Gains from Better  
Indoor Environments and Their Implica-  
tions for the U.S. Department of Energy*,  
a 2000 study by William J. Fisk of the  
Lawrence Berkeley National Laboratory in  
California [www.rand.org/scitech/stpi/Evis-  
sion/Supplement/fisk.pdf](http://www.rand.org/scitech/stpi/Evis-<br/>sion/Supplement/fisk.pdf)

Turner Construction Company survey of  
healthcare administrators  
[goliath.ecnext.com/coms2/summa-  
ry\\_0199-1945893\\_ITM](http://goliath.ecnext.com/coms2/summa-<br/>ry_0199-1945893_ITM)

Center for Health Design study on patient  
stress [www.healthdesign.org/research/  
reports/patientstress.php](http://www.healthdesign.org/research/<br/>reports/patientstress.php)

*Green Building Costs and Financial  
Benefits* by Gregory H. Katz  
[www.cap-e.com/ewebeditpro/items/  
O59F3481.pdf](http://www.cap-e.com/ewebeditpro/items/<br/>O59F3481.pdf)

*Sustainable Building Technical Manual:  
Green Building Design, Construction, and  
Operation*, by David Gottfried  
[smartcommunities.ncat.org/pdf/sbt.pdf](http://smartcommunities.ncat.org/pdf/sbt.pdf)

U.S. Green Building Council  
[www.usgbc.org/](http://www.usgbc.org/)

buildings with shorter stays, drug sav-  
ings, and labor costs at \$10 million a  
year for a 300-bed hospital.

The Center for Health Design has  
also identified significant savings in  
personnel costs. Green design can  
act as a magnet for qualified staff.  
When Woodwinds Hospital in St. Paul,  
Minn. — a leading 'green facility' in  
the upper Midwest — recruited for 400  
new positions, 3,800 resumes poured  
in. Results like this mean that staffing  
costs could help pay for the increased  
costs of building green.

Green buildings can also signifi-  
cantly reduce energy costs. According  
to a study authored by Gregory H.  
Katz, the director of financing for en-  
ergy efficiency and renewable energy  
at the Department of Energy, green  
buildings reduce energy consumption  
by 25 to 30 percent on average. Busi-

nesses in the U.S. spend more than  
\$107 billion annually on energy for  
their facilities, according to the DOE. A  
30 percent reduction in this cost would  
represent \$32.4 billion annually in  
bottom-line savings for businesses in  
every region and sector of the country,  
including energy-intensive opera-  
tions like hospitals and other medical  
facilities. Healthcare, which represents  
14 percent of U.S. gross domestic  
product, could see large returns  
sector-wide.

#### The cost of going green

In order to measure the value of green  
buildings, however, it is also necessary  
to consider the cost of building green,  
as compared to traditional build-  
ing practices. There is a widespread  
misconception that green building  
is significantly more expensive than

conventional building methods. While  
building green may come at a higher  
initial cost than traditional building  
methods, green investments are eas-  
ily regained over time. In *Sustainable  
Building Technical Manual: Green  
Building Design, Construction, and  
Operation*, author David Gottfried  
estimates that the initial construction  
of green buildings typically accounts  
for only 2 percent of the total cost, with  
operations and maintenance account-  
ing for 6 percent. When you consider  
the yearly savings that result from  
reducing lost work time and improving  
employee health that result from green  
businesses, the benefits of green build-  
ing become even more obvious.

The medical services sector has  
been slow to adapt green practices.

According to the U.S. Green Build-  
ing Council, only 188 of the 9,769  
LEED registered projects in the United  
States are healthcare buildings. Of the  
1,325 certified projects, only 20 are  
healthcare projects. There is only *one*  
certified LEED Platinum medical facility  
— the OHSU Medical Office Building  
in Portland, Ore. — although others  
are currently in the process of gaining  
certification.

Why haven't more healthcare facili-  
ties gone green? Many remain resistant  
to green building due to higher con-  
struction costs. However, as demon-  
strated above, the preliminary invest-  
ment in green building is returned in  
the long-run through the continued  
health and productivity of workers and  
reduced energy costs. In the near fu-

ture, with more and more key corpora-  
tions reaping the benefits of choosing  
to go green, healthcare providers that  
resist the green movement will face  
staunch criticism and, ultimately, risk  
failure. Green building has undeniably  
become a benchmark in industrial,  
residential, and commercial building,  
and green practices now are gradually  
taking their place among best practices  
in the healthcare field. The future of  
healthcare finally looks greener — and  
healthier — than ever before. ■

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