

# PLANTS THAT HEAL INDOOR THERAPEUTIC GARDENS

Since 1973

### CASE STUDY

### Henry Ford Hospital West Bloomfield

Nestled in 80 tranquil acres, the design of Henry Ford West Bloomfield Hospital was inspired by a northern Michigan lodge. The two atriums at Henry Ford Hospital are considered to be the lungs of the facility. Combined, the atriums have approximately 2,500 live plants, installed as a design-build project by Planterra.

### Features of the Atrium:

**Natural Views** All 300 inpatient rooms have views of nature overlooking the indoor atriums or the exterior woodlands surrounding the hospital.

A Place of Refuge Isolated from the Main Atrium, the Quiet Atrium is insulated from distracting noises as a place of rest, rejuvenation and meditation. This area includes intimate seating areas and an interfaith sanctuary.

**Privacy Screening** Plantings screen inpatient rooms which overlook the atriums. Isolated walking paths are integrated into the plan to provide for private, well-screened seating areas.

**Clean Air** Plants and trees with the highest toxin absorption rates were specified and planted, such varieties include the Peace Lily, Ficus and Boston Fern.

A Community Venue The Ravitz Foundation Main Atrium serves as a gathering place for patients, visitors, employees and the local community. The atrium contains an organic tea kiosk, a grand piano and ample space for events and fundraisers.

**Real, Live Plants** Management mandated that all plants be real to achieve the maximum healing benefits.

**Sanitized Plantings** All plantings were grown, isolated and acclimated according to specific standards that ensure sanitation. The plants and trees are planted with a sterilized, soil-free mix.

**Expert Care** The atriums are maintained under the supervision of senior horticultural specialists at Planterra using environmentally sound practices such as IPM management and sub-irrigation. Excellent maintenance is critical to delivering a healthy environment and long-term value.



Foliage on a winding walking path provides privacy and screening for patients.

"Plants bring nature inside the building so even in the off season times our community can still come here and be connected to nature and really take advantage of its healing affects."

 Gerard Van Grinsven, President and CEO, Henry Ford Hospital West Bloomfield



The Interfaith Sanctuary in the Quiet Atrium is a place for meditation and rejuvenation





### HOW PLANTS CLEAN THE AIR

Through the process of photosynthesis, plants absorb light, carbon dioxide and water to manufacture sugar. The byproduct of this complex process of chemical reactions is oxygen. Even in buildings with the most advanced air filtration systems, none manufacture oxygen - the vital ingredient for healthy, breathable air.



Plants grown for interior landscaping are mostly comprised of species that are native to the understory of rainforests where there is less light and fewer breezes than in the canopy level. These plants naturally photosynthesize in lower light and have evolved to accelerate transpiration, a process that creates air movement. Transpiration circulates air and pulls airborne toxins into the leaves and roots.

Chemical	Microgram
Acetone	•••••
Methyl ◆◆	*****
Ethyl acetate ◆◆	*****
Benzene ◆◆	****
Ammonia ◆◆	***
Trichloroethylene ++	<b>**</b>
Formaldehyde ++	<b>*</b>
Xylene ◆	







In addition to oxygen, plants manufacture phytochemicals. These are natural chemicals that the plants use to protect themselves from microbes, insects and diseases. Phytochemicals suppress mold spores and bacteria in ambient air. Studies from NASA indicate that plant filled rooms contain 50 to 60 percent fewer airborne molds and bacteria than rooms without plants.

Subression of mic	robes by houseplants
	Relative number of microbial colonies
Plant-filled sunroom	*************
72 percent humidity	****
Bedroom no plants 56 percent humidity	******************

Most modern buildings have traces of toxins which emit from virtually every synthetic product ranging from carpeting to computers but it is lesser known fact that human occupants produce a pollutant called bioeffluents. Levels of bioeffluents can be especially high in crowded spaces but plants can successfully reduce these pollutants.

Bioeffluent ren	noval by the Peace Lily
Ethyl alcohol	*******
Acetone	*****
Methyl alcohol	*****
Ethyl acetate	***
	Bioeffluent removal per plant

As long as a plant is living, the plant will continually produce oxygen and absorb toxins from the air. The plant does not store the toxins but it chemically converts the toxins into food and beneficial natural chemicals. According to NASA studies the plants removal rate accelerates as the volume of airborne toxins increases.

### Source:

B.C Wolverton. How To Grow Fresh Air. Penguin New York 1996.

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### THE RESEARCH: PLANTS THAT HEAL

### Faster Recovery

Patients who have rooms with views of plants and greenery recover faster and require less pain medication than patients without views of nature. 1 Urlich, Texas A&M University

### Reduces Stress

Patients exposed to natural environments can experience lower blood pressure and reduce muscle tension, producing recovery from stress within four to six minutes. 2 *Urlich, Simmons, Texas A&M University* 

## Happier Employees

The presence of interior plants creates an environment of wellbeing for employees and enhances positive perceptions for the workplace. Conversely, employee perceptions are less positive in the absence of plants. *3Stiles, Oxford University.* 



"It has to be real live plants; if you work with fake plants it's very difficult to really stay faithful to your vision in creating a community center for wellbeing."

 Gerard Van Grinsven, President and CEO, Henry Ford Hospital West Bloomfield

### Sources:

- 1. Ulrich RS. View through a window may influence recovery from surgery. Science 1984: 224:420-421
- 2. Ulrich RS, Simons RF. Recovery from stress during exposure to everyday outdoor environments. 1986. In: Wineman J, Barnes R, Zimring C (eds.). The cost of not knowing: Proceedings of the Seventeenth Annual Conference of the Environmental Design Research Association. Environmental Design Research Association, Washington D.C.
- $3.\ Stiles\ J.\ 1995.\ PhD\ thesis\ at\ Oxford\ Brookes,\ University,\ Oxford,\ England.$



Established in 1973, Planterra is the leading interior landscape firm serving the healthcare industry. Planterra specializes in interior landscape consulting, design, installation and ongoing horticultural care. Known for personal service, high quality and exceptional specimen plants, Planterra is the preferred vendor among architects, interior designers and healthcare facilities professionals.



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