



The Invisible Benefits of Interior Landscaping

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The beauty that well-maintained plants bring to an interior space is easy to see, but other benefits of interior landscaping are more elusive to an untrained eye. In a natural environment, plants convert carbon dioxide into beneficial oxygen while converting nearby matter into food. Many pollutants in indoor environments closely mimic the chemical composition of what plants live on in natural environments. According to Larry Pliska, president of Planterra Tropical Greenhouses, Inc., plants can adapt to an artificial environment by absorbing these harmful emissions, making the plants silent partners for indoor air quality.

Understanding the Source

“Synthetic materials cause indoor air quality problems,” said Pliska. “The bad air that comes from synthetic materials can cause respiratory disease, loss of productivity, loss of concentration and absenteeism.”

Before synthetic materials found their way into the workplace, desks were crafted from solid pieces of natural wood, and natural textiles such as wool were used for drapes and carpeting. Despite the fact that these natural substances emitted no harmful substances, modern realities prevent their return as materials of choice.

“Real things cost more than synthetic things,” said Pliska. “If something is manufactured, it is possible to make hundreds of identical units. If you want something unique, like a solid oak desk, you are going to pay dearly for it.”

Synthetic materials emit trace amounts of formaldehyde and benzene. While these compounds are fairly complex, their chemical building blocks are quite simple.

“All chemical compounds can be broken down,” said Pliska.

“They’re all natural products that have been assembled into synthetic materials by man.”

Pliska also pointed out that plants are well suited to the task of breaking these complex materials down because of their adaptability. Plants continually evolve to better survive in their environments. Cactuses, for example, gradually replaced leaves with spikes to protect their moisture from animals. Modern plants are developing the ability to convert synthetic materials into harmless compounds that are used to sustain the plant in exactly the same way.

The Green Solution

About 15 years ago, B.C. Wolverton began conducting studies for NASA to determine how effective living plants were in cleaning indoor air. It was found that only one or two medium-sized plants per 100 feet of floor space could have a dramatic effect on indoor air quality. In tests with both formaldehyde and benzene in

small spaces, the philodendron cut atmospheric toxin levels by more than 87 percent in 24 hours.

Although Pliska stressed that any plant can have a positive effect on indoor air quality, Wolverton’s research identified the species that filter air most effectively. Some of the most aggressive pollution-fighting plants, according to the tests conducted by NASA, include the spathiphyllum (peace lily), ficus benjamina, dracaena warneckii and the chrysanthemum. Despite the exotic names, all of these plants are affordable and readily available. Building owners who want to clear the air without memorizing a long list of plant names can be guided by a few simple rules of thumb.

“Any plant that has a broad leaf will work well,” said Pliska. “The broader the leaf, the more pollution the plant is able to ingest and convert into oxygen.”

Because of this, plants from the ficus and philodendron families are good air quality choices. Most have broad leaves, are easy to care for, and thrive in indoor environments.

In addition to being unhealthy, some indoor pollutants like cigarette smoke can also create an unpleasant odor. Pliska noted that flowering plants, including the pollution-busting chrysanthemum, make excellent choices to mask these specific odors.

Knowledge of how plants can be used in an indoor air quality plan

can be very useful to a building owner, although there are still some common mistakes to be avoided. The easiest way to avoid these mistakes is to consider the plants that will go into a building early in the design phase. With the Wintergarden that the General Motors Corporation operates at the Renaissance Center, for example, Planterra joined the project team that created the award-winning garden three-and-a-half years before construction began. By getting involved early, interior landscape consultants can provide suggestions to assist architects and designers in creating facilities that will support the plants they hope to include. As one would expect, lighting is a key consideration.

“In our trade, light dictates design,” said Pliska. “The more light that we have, the more species of plants that we can use and the more creative we can get.”

With careful planning, plants can even be incorporated into environments that are not ideally suited for them. Even low light can be compensated for with plants that are adapted to living in the shade beneath taller trees.

Planterra has developed a reputation for finding ways to put plants where one would not expect to see them. They even placed an Adonidia palm inside a factory for BEHR Systems, Inc. in Auburn Hills, proving that there is no working environment in which plants can not be included. The Adonidia palm was selected because it was the tallest, fairly inexpensive palm species that would thrive on a factory floor after special halite lights were added. The plant has been such a popular addition that workers have dubbed the factory “BEHRadise” and BEHR Systems is working with Planterra to add more greenery at the facility.

Although some might consider a factory environment as too dirty for plants to thrive, Pliska has found that overcoming dirt in other environments can be an even greater challenge. Restaurants, for example, can make every effort to maintain a clean, safe environment, but cooking oils will still linger in the air.

“We put a lot of palms in restaurants and we have discovered that we have to take them out and hose them down because dust collects in the oils that build up on the leaves,” said Pliska. “If the dust sets in the oil, it blocks the pores up and the plants must be cleaned to allow photosynthesis.”

To survive in this environment, plants have to be fairly hardy. Aspidistra are commonly referred to as “cast iron” in the interior landscaping business because of their durability, making them an ideal choice for restaurant use.

Once the right plant is selected for a space, it must also be positioned properly. In addition to being placed near a light source, plants should be positioned away from HVAC exhaust vents, which can cause leaves to dry out.

According to Pliska, one of the biggest mistakes that building owners make is not taking all of the costs into consideration before introducing plants into a space. Bringing plants into a workplace is almost like bringing a puppy home. Everyone wants a puppy, but few people want to be saddled with the commitment that comes with dog ownership. Plants are much the same way; office workers react favorably to them, but Pliska recommends against entrusting their care to the office or custodial staff. People without green thumbs may do more harm than good, and even those who can care for the plants adequately often fall behind on the tasks that they were actually hired to do.

Maintenance is a vital task often overlooked, but requires a professional touch. In fact, 50 out of Planterra’s 70 employees are technicians who undergo constant training to keep previously installed plants looking their best.

With plants and a plan to maintain them in place, building owners can reap the rewards of a more productive workforce.

“Some of the offices that we decorate are prettier than the houses that the workers live in,” said Pliska. “They go to work and spend eight or ten hours a day there, so the environment needs to be clean for them to be efficient. Plants create efficiency for office workers because health is connected to productivity.”