

GREEN TECH THE SERIES COLUMN FOR MAY 18, 2016

HEADLINE: AIR QUALITY; BETTER CLEANING AND AIR FILTERING

We commonly think that air pollution is something that only happens outdoors; smog, the haze of summer and the “urban island” effect that generates excess heat and reduces the ability of the wind to move air due to the buildings in a city. A number of studies of late have really brought home the fact that indoor air is likely more polluted than the air outside. The list of things that are contained in the average interior household air is a long one. Formaldehydes from furniture and from manufactured wood products, in the glue they use; chemicals from cleaners and air fresheners; ammonia cleaners or a guest who has a pet that leaves pet dander. One of the studies I referenced for this week was done by a Dr. Lang at the renowned Allergy/Immunology Clinic in Cleveland Ohio. He calls pet dander the community allergen; you simply cannot get away from it. We know that we spend upwards of 90% of our life indoors and, with homes more air tight as Dr. Lang states, “We are exposed to a greater degree than we were 30 or 40 years ago.”

Dr Lang went on to say that it’s time that all vacuum cleaners operated with a Hepa Filter to reduce allergens, pollen pet dander and dust mites and that far too many vacuum cleaners are simply recycling the air. In his view Hepa Filters should be mandatory.

Allergies and the side effects are the most common air quality related issue that affects household occupants. Hay fever is number one on the list. Seasonal allergies are often caused by pollen, while year round allergies can be caused by dust mites, pet dander and general house dust. Portable vacuum cleaners recycle a portion of these due to the leakage in the air bag. We now fill our homes with air cleaners and portable purifiers to help clean our air.

Central vacuum cleaners are being recognized as a serious way to eradicate a greater portion of the air quality issues we now are experiencing. In the US a recent study revealed some interesting facts, to the point where National Home Builders are recommending central vacuum installations. This study determined that regular use of a central vacuum with a Hepa Filter showed a 61% improvement in allergic reaction in eyes, reducing the itchy, watery discomfort. As well, it showed a 44% improvement in the occupants of the test homes with respect to sleep difficulty. 48% of the occupants in the test homes showed a 48% improvement in non-nasal discomfort, headaches and tiredness. Simply put we

are living in closed air environments and, while we recognize air exchanges, we are not getting the allergens in the home removed during regular cleaning of a home. The study went on to say that we are not changing our furnace filters often enough, nor using a proper filter that can reduce some of this issue.

Central vacuum systems should be installed in a garage and, if the home does not have one, in a closed room away from the regular home activities. The exhaust air should be vented to the exterior. Fitted with a Hepa Filter, the well-known suction power of these systems is starting to make sense especially in a well-sealed home.

## NATURAL AIR FILTERS

Some years ago NASA released a study on the benefits of plants in reducing air quality issues, sometimes called the sick building syndrome. The first study, done in 1989, researched ways to clean air in the space stations. They have since upgraded this study, released a list of indoor plants that may provide a natural way to remove toxins like benzene, formaldehyde and trichloroethylene. These chemicals are common in furniture, foam products, air fresheners and perfumes. As well as absorbing carbon dioxide and releasing oxygen as all plants do, this specific list of plants go beyond this in helping clean indoor air. NASA researchers suggest efficient air cleaning is accomplished with at least one plant per 100 square feet of floor space in a home. Other research showed that micro-organisms in some potting soil helps remove benzene.

The top ten plants they recommend are well known to most gardeners or indoor plant enthusiasts. Number one on the list is English Ivy; easy to grow it tops the list for eliminating airborne fecal-matter particles and second hand smoke. Number two was the Golden Pothos, known to be hardy and almost impossible to kill, this plant is most effective eliminating formaldehyde. Every new home should have this plant. Boston Fern was next. This pretty plant adds humidity to a home, as well as reducing formaldehyde.

Number four is the Dracaena, another hardy indoor plant that does well reducing the chemicals from paint and varnish. Bamboo palms, with similar air cleansing value as the earlier two, does well in the shade and is resistant to insect infestation. Dragon trees are well known for office decoration. They do well in homes, too, and have similar air quality values and need little maintenance. Peace Lilies, Lady Palm and Snake Plants round out the group. Two others that I know of are effective air cleaners. Spider plants placed near the kitchen reduce carbon monoxide. My personal favorite is the Aloe Vera. Sitting in a sunny

window they are effective for reduction of chemical based cleaner's byproducts like benzene. The gel inside the aloe plant is excellent for healing cuts, sunburn and other skin abrasions.

Indoor air quality is now recognized as the number one health issue in our homes. Cleaning your home with a Hepa filtered vacuum cleaner and the addition of the right plants make a good start.

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