# How to Design a Healthier and Happier Space at Home and in the Office

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Image: Liquid Interiors

## Take note of materials used to build your home

When Gonzalez is hired to renovate an apartment for one of her clients, she watches her contractors like a hawk. “A lot of times general contractors take the general paint that you specify and add a hardener to it to make it dry fast and make it more durable. That’s highly toxic,” she says. “Always look for a low VOC label,” she advises, referring to the volatile organic compounds that are found in paint, varnish and other finishes, which are released into the air, causing headaches, allergies, nausea and fatigue.

Gonzalez makes sure to always use paints that have little to no VOCs, and she also watches out for furniture, plywood and other materials that commonly contain formaldehyde; she recommends looking for those that meet E0 or E1 emission standards. “And stay away from things that off-gas, like plastic furniture or plastic shower curtains,” she says.

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Finding materials that don’t poison you is only one part of the challenge. The other is crafting a space that makes you feel at ease. “We are always looking for an honest expression of materials,” says Richard Hassell, co-founder of Singapore architecture firm Woha, which has won global attention for eco-friendly buildings designed with an eye to wellness.

“There’s a danger with artificial materials that give off this feeling of inauthenticity,” he says. Humans gravitate towards greenery and other natural elements, a phenomenon known as biophilia. But Hassel warns against fakery, like artificial flowers, moss or vines. “For example, if you initially have a biophilic reaction to a plant and then find out that it’s plastic, you feel a bit cheated—it’s like a mini shock to the system.”

***(Related: Woha Founding Directors Wong Mun Summ And Richard Hassell On Creating A Greener Singapore)***

That doesn’t necessarily mean spaces need to look overtly natural or rustic in order to comfort the people who use them. One of WOHA’s most renowned projects, the Parkroyal on Pickering hotel in Singapore, combines the rigid geometry of glass curtain walls with sinuous open spaces whose walls resemble the geological strata of a cave.

“We think about how we can use abstract or industrial elements in a way that evokes a biophilic and calming response,” says Hassel. “So we don’t necessarily have to always just use plants or wood, but implement design that resonates with natural principles.”

## The importance of light

The dark days of interior spaces lit by harsh fluorescent lights are numbered. The advent of energy-efficient LED lights, which produce little heat and can be programmed

to emit light across the colour spectrum, means that good lighting is more accessible than ever before.

As any photographer will tell you, light is everything. It can make a space look warm and inviting or cold and repulsive. And it affects our psychological health too, which is why people in northern climates suffer from seasonal depression during the dark days of winter, and why looking at the bright white light of a phone or computer screen can leave you feeling jittery through the night.

Gonzalez recommends circadian lighting for her clients; she uses it in her own home, too. In the morning, lights begin with the soothing tones of dawn before intensifying into an energising white hue. In the evening, it's the opposite. "It's exactly the same as being outside," she says. "Colour temperature naturally affects melatonin and serotonin levels."

There are now plenty of smart-home systems on the market that allow you to control the LED lighting in your home. In one of Gonzalez's projects, an airline pilot who works at odd hours asked for a combination of blackout blinds and circadian lights that would allow him to wake up and feel refreshed even in the middle of the night.

But she cautions against diving too far into the world of home automation. Too much screen time can disrupt the rhythm of your sleep, so Gonzalez prefers keeping all of her devices outside the bedroom. "If you want to control the lights or the blinds, I still prefer a wired-in system over a wireless system," she says. "It is more expensive but it is still way more responsive and it's a lot more stable, whereas if you're relying on the internet to close your blinds, it becomes more of a hassle at the end of the day when it doesn't work. And that's just more stress."

## Ventilation and indoor air quality

"The strange thing about air quality is that because it's invisible, people tend not to focus on it," says Bisagni. "Without clear data that can be easily accessible, people just don't know what the problems are."

That's especially true for indoor air quality, which many studies have shown is often worse than we think, thanks to VOCs, cooking fumes, dust and even the $CO_2$ we exhale. Compared to Europe and North America, however, Hong Kong and other Asian cities have the additional challenge of severe air pollution, with frequent haze and often dangerous levels of PM2.5 particulates.

So how do you guarantee indoor air quality when the air outside may be just as bad—or worse? “In other parts of the world, having an internal air purifier works, but because the outdoor air here is not so good, we need air purifiers for fresh air as well,” says Gonzalez. Traditional split-type air conditioners simply recycle indoor air, which can lead to high $CO_2$ levels in places like offices and schools, but Japanese manufacturer Daikin recently introduced an outside air processing unit that can be attached to split air conditioners, introducing filtered fresh air into the mix.

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The problem is that air conditioning uses enormous amounts of electricity, which exacerbates air pollution in a largely coal-dependent city like Hong Kong, not to mention the carbon emissions that contribute to global warming.

Local efforts to fight air pollution have had some success, according to data from the Hong Kong government, so it may be wise to prepare for a future that relies less on air conditioning. In the 1990s, architect Mike Pearce designed the Eastgate Centre, an office and retail complex in Zimbabwe that was inspired by termite mounds, which have a particularly efficient system of natural ventilation. That cut the Eastgate Centre’s energy use by 90 percent compared to similarly sized buildings.

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As the climate crisis worsens, many more architects are looking for ways to cut energy costs by cooling their buildings naturally. “Our buildings rely a lot on natural ventilation, especially the public areas, and we also integrate things like monsoon windows into our design so people can leave the window open during any kind of weather to let fresh air in,” says Hassel.

The benefits go beyond energy efficiency. Studies have shown that simply being outdoors can reduce stress and anxiety. “We design ‘breezeways’ that make the outdoor common areas of our developments comfortable places to spend time and get to know your neighbour,” says Hassel. Oasia Downtown, a 207-metre-tall tower in Singapore, is punctured at several places by vast outdoor sky lobbies; in Alila Villas, a resort in Bali, open-air guest villas are designed to channel the tropical breeze, “so you can enjoy the tropical weather but be comfortable at the same time.”

## More greens please

It has been more than 30 years since French botanist Patrick Blanc pioneered vertical gardens. Today, it is possible to install a self-watering wall of greenery inside any apartment, and a number of architects have festooned their buildings with vegetation,

including Woha. Parkroyal on Pickering contains nearly twice as much green space as the public park across the street.

“Plants remove dust and pollutants and they add beneficial volatile substances to the air like essential oils,” says Hassel. “The biophilic effect that plants have on people enhances a sense of wellness and calm—there are many studies that show that being around plants has a positive impact on our physical and mental health.”

You don’t need an architect to obtain these benefits for yourself. Research conducted by NASA on board the International Space Station in 1989 found that common indoor plants scrub the air of toxins such as benzene and formaldehyde, and it takes just eight large houseplants to improve the air quality of a 900-square-foot home.

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“We put greenery in every room,” says Gonzalez. “In places where natural light is not enough there are options like dried plants and other types of natural decor that can decorate the space and still give a relaxing feel.”

In outdoor spaces like a balcony or rooftop, Gonzalez has found that greenery can serve a functional purpose, too. Passionfruit vines grow exceptionally well in Hong Kong’s hot climate, and she has found that they work well as a shading device if they are grown along a trellis. “You can have that shade and you get tons of passionfruit.”

***(Related: 10 Ways To Make Your Home A Greener Space)***

These are just some of different ways spaces can be designed to make their inhabitants happier and healthier. “There’s no silver bullet,” says Bisagni. Gonzalez agrees: “We truly believe that wellness is a journey and it’s very personal.”

But one thing is certain, she says. “We’ve entered into a new era of wellness. It touches everything you do, everything that you eat, the products that you buy, the clothes that you wear, where you travel—and of course your everyday living space.”

How’s your sleep? Your answer may have less to do with you and more to do with the space you inhabit. A growing body of research has found that our homes, offices and public spaces have a direct impact on our health and wellbeing. “We spend 90 per cent of our time indoors,” says Rowena Gonzalez, founder of Liquid Interiors, an interior design firm with a focus on wellness. Yet so many indoor spaces are hurting us through poor air quality, nerve-wracking lighting, toxic materials and stultifying design that leave us feeling drained, anxious and generally unwell.

Now there is a movement to undo that damage. In 2014, a group of entrepreneurs, scientists and environmentalists banded together to launch the Well Building Standard, a performance-based rating system meant to encourage spaces that are good for human health and the natural environment.

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A dining room in a three-storey family home in Hong Kong outfitted with non-toxic materials and furnishings by Liquid Interiors (Image: Liquid Interiors)

"The building standard is just a tool, but at the end of the day, it's about human understanding and educating the general population about a better way of living and going to work," says Xue Ya, director of the International Well Building Institute Asia.

"It came on the scene a few years ago and now it's all everybody is talking about," says Alessandro Bisagni, whose Hong Kong-based consultancy, Bee, develops green building strategies. He says the new focus on wellness helps round out thinking about sustainable building, because there is a big overlap between buildings that are good for the Earth and those that are good for your health.

"The moment you have discussions about how your office can make you sleep better, have less stress, spend more time with your family, there's an immediate response," says Bisagni. "With the constant news about air pollution, people are generally afraid —they're concerned their indoor spaces are making them sicker. So if an employer can guarantee that they're healthier in the office than they are at home, it's an asset."

But how does that actually play out in terms of design? It turns out there are a few crucial elements that shape how we feel about our spaces.

Kampung Admiralty, Singapore's first integrated retirement community, designed by WOHA. The tree canopy of the landscaped terraces includes multiple local fruit trees and the rooftop features a community farm

By Christopher DeWolf

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Wellness is dependent on more than the gym you attend or the type of yoga you practise —the design of your home and office can boost your health and happiness, too