THERE ARE GOOD REASONS WHY MOST OF US HATE THE SMELL OF PAINT AND EVEN FEEL UNWELL FROM IT. BUT THAT COULD BECOME A THING OF THE PAST WITH THE NEWER, LESS TOXIC ALTERNATIVES ON THE MARKET.

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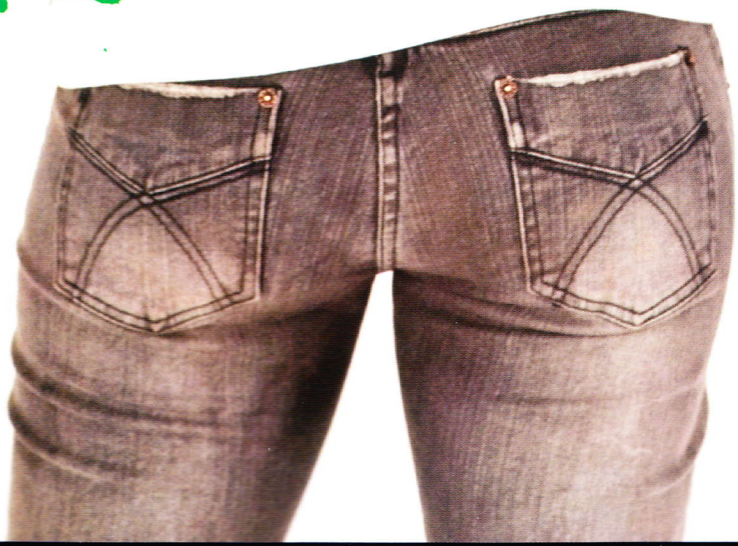
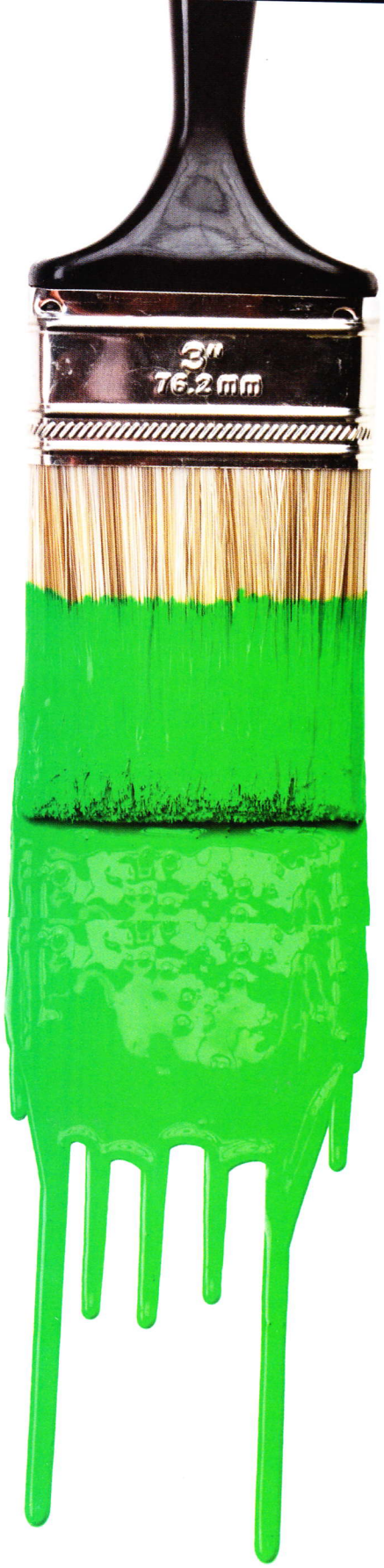
# colour me GREEN



**Historically, cultures have been obsessed with colour and decoration. For evidence of early interior design, we need look no further than cave paintings, where natural pigments such as ochre, plants and seeds were ground into Neolithic sample pots. The Aztecs derived red cochineal by squashing female cochineal beetles, while the Romans concocted purple from squashed molluscs.➔**




WHAT THE INDUSTRY IS SAYING IS, 'WE'VE BEEN POISONING YOU BUT NOW WE ARE GOING TO POISON YOU LESS.'

For almost 40,000 years, paint contained only natural, available resources and therefore presented very little health risk. The likelihood that cave dwellers were overpowered by fumes or suffered chemical-induced headaches while admiring their masterpieces is very low. Nowadays, the CSIRO estimates that indoor air pollution costs the Australian community $12 billion a year in lost productivity due to resulting illness.

Problems began to arise in the 1900s with the innovation of synthetic agents in paint. It was then that the three major constituents of paint — pigment, binder and solvent — were modified to include substances believed to enhance quality and durability.

For many years, lead was an additive but it was banned when its toxic properties were discovered. Manufactured solvents, designed to improve the viscosity of paint, emit volatile organic compounds (VOCs) during the evaporation process of application. Their function of liquefying paint so it glides on smoothly was emphasised with little regard to the environmental cost.

The fact is, surfaces require paint not purely for decoration but for protection and durability. CSIRO studies conducted in recently renovated buildings show that paint emits about 70 per cent of the indoor pollutants. Solvent-borne paint contains an element called ethyl benzene, classified as a potential carcinogen. Respiratory problems such as asthma as well as migraines and dizziness can all be traced to VOC exposure. How can we possibly paint without compromising indoor air quality (IAQ)?

House painter Daniel Wurm had a brainwave that followed his series of violent headaches. He realised that his work practices, even painting in breezy, well-ventilated rooms, made him sick. Switching to low-emission paint gave him stunning results. So impressed by the difference, he conceived a national non-profit organisation called GreenPainters to encourage professional painters to use certified low-VOC paints for their own benefit as well as their clients'. "The good news is that many paint companies now offer healthier low-emission (low-VOC) products and paints that contain all-natural ingredients that have no emissions at all," he explains.

"Many painters are exposed to dangerous and poisonous chemicals, many of which are proven carcinogens, in the course of their trade. These chemicals are absorbed through the skin and the lungs when breathing in fumes. Over time, they accumulate in the body, leading to possible future health issues, including chemical sensitivity, impaired colour vision, tremor, cognitive defects, sterility and associated reproductive risks," says Daniel.

Major reforms in the past 50 years include the development of solvent-free or water-borne paints, containing minimal if not zero, VOCs. The current Australian paint standards are for a maximum of 7.5 per cent VOC component but is this figure adhered to? More punters now search for a healthy alternative when redecorating and think about the sustainability of the product and its effect on the planet. But many still search for the quickest, cheapest option. How do we decide?

Left: You should be aware that just because a paint doesn't smell it doesn't mean it's not off-gassing. There are chemicals that can be added to reduce the odour of paint.

Is there a difference in durability? Is there a price differential?

"You have the two camps," says Stuart McPhee, general manager of Ecolour. "You have the natural camp, which has been good in certain applications but has had limited colours and scrubability and was more expensive; and then you've got the synthetic camp, which is cheaper and works well but has a bad history of lead content or solvent-based paints. Now the whole industry is going towards low VOCs." He adds, "What the industry is saying is, 'We've been poisoning you but now we are going to poison you less.'"

Stuart set up Australian company Ecolour to appease his ecological conscience but also after experimenting at home. "I used these products five years ago when I painted one coat on some bricks on the exterior of my house. I then whipper-snippered up to it for years and thought it was just awesome paint and I didn't know of any other paints like it. So I approached the inventor and he now works for us doing research and development," he recalls.

Unusually, Ecolour converts recycled and re-refined waste engine oil into a water-based paint that acts as a preservative and provides durability and smooth application. "We make a synthetic paint using premium ingredients then we replace the nasty preservatives and drying agents with our own emulsion. Our inventor was featured on *Beyond 2000* in the 1990s, so we have proof our paint outlasts regular paints with completely zero outgassing," Stuart says.

He created consequently a carbon-neutral company. "Because we use oil that would otherwise be burnt as fuel, contributing to climate change, we get carbon credits. So we're good for the planet, good for your health, good quality and the same price as regular paint. Rather than making as much as we can on each bucket, we're doing something good for the environment," he says.

Ecolour paints can be applied over solvent-based paints and used as a quick fix to block the emission of harmful ingredients. He adds, "We often have customers who have moved into a new house that has been freshly painted and they have a bad reaction. They just want to lock those chemicals in because they will outgas for years, so one coat of our paint will seal them."

As well as paint for interiors, exteriors and timber finishes, Ecolour is refining its cultural connections by developing zero-VOC paints specifically for artists.

Angela Petruzzi of natural paint company Livos is not surprised that consumers find choosing paint a nightmare. Her advice is to ask as many questions as possible and read all labels thoroughly.

"You should be aware that just because a paint doesn't smell it doesn't mean it's not off-gassing. There are chemicals that can be added to reduce the odour of paint. Consider the effect of repeated coatings, which can multiply the VOCs emitted. Does a smaller volume of a solvent-based coating provide better covering than multiple coats of a paint with a water-based solvent?" she asks.

One benefit of paint with a natural-based solvent (made from plant oil, natural resins and minerals) is that it will emit 90 per cent of VOCs within an hour of application, whereas petrochemical-based solvents continue to emit gas for weeks or even years. "Unfortunately, you can get used to the smell to the point where you no longer notice it," says Angela. Natural paint quite literally breathes, reducing condensation and subsequent mould build-up. It is washable and uses naturally occurring pigments, making it hypoallergenic. But what makes paint sustainable?

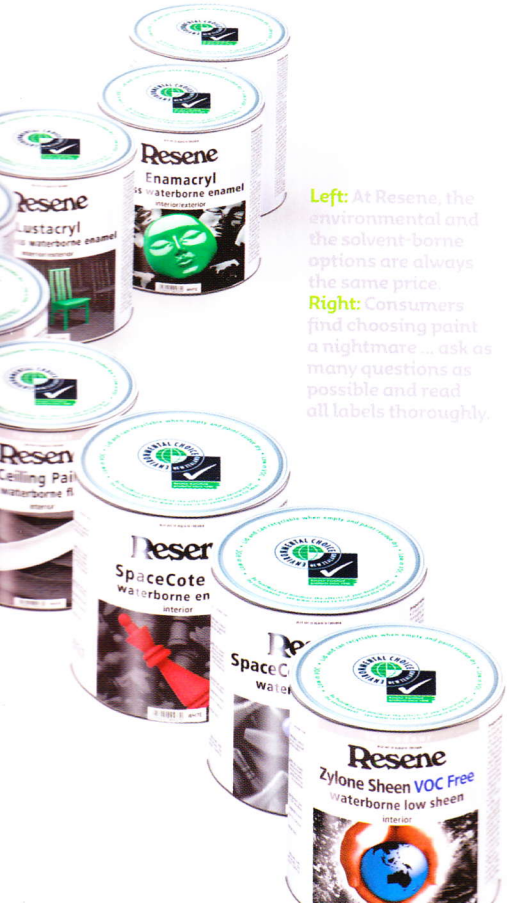
Karen Warman, marketing manager for Resene, explains, "The key to improving sustainability in paints is not just making the paint itself 'greener' but ensuring that the paint will last and keep looking good. A cheap-quality paint is a false economy, both money wise and environment wise, because it will normally require more coats upfront and will break down faster, requiring more maintenance in the longer term."

A family-owned company, Resene's eco-friendly philosophy saw them develop water-→

borne paints as early as the 1950s. "Our technical director, who has been with us for nearly 40 years, took that water-based innovation and spent the next 40 years getting better and better at it," explains Karen. "Typically, when you buy an environmental choice in today's age, you have to pay more for the environmental option. At Resene, the environmental and the solvent-borne options are always the same price and the idea is we don't want to discourage someone from doing the wrong thing because the price is $1 or $2 more," she says.

The company joined the Environmental Choice-approved products in 1996, an eco-labelling trust initiated by the government. This acts as an independent guide for consumers and also acknowledges the efforts of manufacturers in reducing the environmental impact of their products. Resene's Environmental Choice-approved products are packaged in 100 per cent post-industrial waste plastic pails.

In New Zealand, the Resene PaintWise program, set up as a charitable trust, offers a collection service of unwanted paint and packaging of any brand. Competitor Dulux also uses the PaintWise service to collect from its trade stores. "We will feed paint containers returned to this service into production of new pails, with the aim being to have all plastic pails made using old Resene pails," says Karen. Resene's belief is that plastic packaging is popular because it tends not to rust and customers often wash out their buckets and reuse them. "Plastic packaging is now starting to improve its environmental footprint and will start to challenge the notion that metal packaging is considered more recyclable," she says.




**Left:** At Resene, the environmental and the solvent-borne options are always the same price.
**Right:** Consumers find choosing paint a nightmare ... ask as many questions as possible and read all labels thoroughly.

> THE KEY TO IMPROVING SUSTAINABILITY IN PAINTS IS NOT JUST MAKING THE PAINT ITSELF "GREENER" BUT ENSURING THAT THE PAINT WILL LAST AND KEEP LOOKING GOOD.

In line with a more sustainable approach to architecture, heat-reflective coatings are increasingly popular. The technology used by Adelaide-based Astec involves nothing more than tiny ceramic balls mixed into paint to deflect heat away from a building, preventing unwanted solar radiation. Challenging the theory that a coating doesn't have to be white to be cool, Astec has developed a range of 44 colours that includes dark hues.

"It is an effective way to avoid the urban heat island effect, which is caused by cities absorbing heat. Usually, this heat combines with chemicals in the atmosphere to produce smog and also increases the temperature in a suburban area by up to two degrees more than the surrounding countryside," says Daniel Wurm. "This technology, when applied to the exterior of a building, has been proven to reflect up to 50 per cent of solar radiation, which not only directly lowers heat build-up in the atmosphere but also helps buildings improve their energy efficiency, resulting in significant cuts to cooling costs and energy usage. The direct and indirect effects of this technology should be considered by consumers for its ability to offset carbon emissions," he adds.

Air-cleaning paint has also hit the market. It takes smog components (ground-level ozone) such as nitrogen oxides and VOCs out of the air.

Green practices are incredibly important to your environmental impact. First, by calculating your paint quantities accurately, you can reduce landfill. Many of us have large collections of paint buckets and tins stored in our cellars, most of which will deteriorate before ever being used. Chances are we will then dump them at the local refuse centre, which may not have a dedicated paint-recycling outlet. The manufacturing process of petrochemical-based paints is energy intensive and uses oil, a non-renewable resource. Large quantities of titanium dioxide, which is environmentally toxic, make disposal of these paints an ecological concern.

This is where the services of a GreenPainter are invaluable. They will help you choose the most environmentally friendly paint option and employ green application and clean-up procedures. GreenPainters are trained to assist in making the exercise more cost-efficient and energy-efficient without adding to your footprint. There are currently 40 registered GreenPainters in Australia with more than half being awarded certification.

It is likely that your GreenPainter already uses this equipment but, if not, on the market are accessories such as rollers made from lambskin to aid smooth, efficient application. Biodegradable paint trays made from 100 per cent recyclable cardboard are a valuable eco-choice as they can be ripped up and tipped into your worm farm or compost bin, once petrochemical-based paint has first been peeled off and disposed of responsibly. GreenPainters also have access to equipment that separates paint chemicals from water so the water can be reused in recycling.

Further enviro-initiatives include:

- Never clean brushes or rinse paint containers into a street gutter or drain, even if using eco-friendly paint.
- Always squeeze excess paint back into the container.
- Seal the lid securely and store the paint upside-down so it forms an airtight seal around the lid.
- Keep leftovers for small touch-ups to avoid having to reorder large quantities.
- Research the whereabouts of your closest hazardous waste depot as not every council provides this facility.

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