

Keep Your Dental Practice Fresh by Becoming “Green” By Robert Shaffer, AIA, CID, LEED AP

THE LATEST SPARK IN THE WORLD MARKETPLACE IS

SUSTAINABILITY and everything “green.” Now that spark includes even dental practices. Green dentistry has become a focus of many clinics around the country and is serving them well as an approach to social conscience, environmental stewardship, reduction of everyday expenses, and potential tax incentives. Years ago, who would have thought that green would be a positive thing to call a dental practice? With all of the options available today, green dentistry is quickly becoming the standard. Green means different things to different people in different circumstances. There are different shades of green: different degrees to which you can green your dental practice. Whichever shade of green you choose—whether greening your current practice, planning a new green clinic in an existing building, or designing a new green clinic building all your own—you are climbing aboard one of the strongest marketing waves to sweep modern businesses since the Internet. Your LEED AP (Leadership in Energy and Environmental Design Accredited Professional) architect can help you choose the level of green that makes the most sense for your dental practice as you ride this green wave.

GREENING YOUR CURRENT DENTAL PRACTICE

Your practice may already be a light shade of green. A variety of options are available for dentists to be as green as they want to be. Many practices have already taken steps to become a greener practice, such as installing an amalgam separator or switching to digital X-rays. Here are some ideas for greening your dental practice:

Use digital X-rays. By switching to digital x-rays, you can use less film and reduce waste from chemicals and lead-lined film packets. Digital x-ray systems are well known to reduce patient exposure levels of radiation. The systems use less energy and can reduce your monthly expenses.

Install an amalgam separator. Amalgam separators are currently required by some, but not all, states and localities. The separators pull the mercury out of your vacuum waste and prevent it from going down the drain and contaminating your wastewater or the water bodies in your area.

Go paperless. The paperless office can be a reality for you. By switching to digital patient files and billing, you can increase staff efficiency and reduce the material costs of folders, labels, and preprinted forms. You may also want to try using electronic forms on which patients can enter information. When paper cannot be avoided, use recycled paper products.

Reduce water usage. Most people don't realize that water purification plants and wastewater treatment plants consume a great deal of energy, use large quantities of materials, and create much waste. There are many ways in which dental clinics can reduce both water consumption and wastewater output. Some easy updates include replacing aerators on faucets with water reduction aerators and adjusting toilets to use the least amount of water while retaining functionality. Steam-based sterilization equipment uses less water and no chemicals, saving money on both counts. And some dental practices save water by using sterilizing hand sprays instead of hand washing.

Choose new equipment wisely. When it's time to replace appliances, monitors, and computers, look for equipment with the energy star label. Some energy-efficient devices pay for themselves in just a few years with their reduction in energy use. Don't forget to recycle any old devices you replace!

Reduce phantom power. Never forget the devious “vampire power” or “phantom electricity” we use on a daily basis but don't typically think about—the trickles of electricity that drain from certain appliances, transformers, and equipment even when not in use. Devices that use phantom power include electronic phones, surge-protected extension cords, small transformers for electronics, and instant-on devices like TVs, monitors, and computers. The small amounts of electricity these devices use all day and night can add up to quite a bit. Save money by setting up computers, televisions, and other equipment so that power is completely shut off at night and on weekends.

Use LED lamps. Another way to reduce your monthly electric bill is to replace incandescent light bulbs and compact fluorescent lamps (CFLs) with light emitting diode lamps (LEDs). LEDs can last up to 50,000 hours or about 20 years in some cases and use about 85 percent less electricity than incandescent bulbs and about half less than CFLs. Most people feel that the latest versions of the LEDs provide a better light quality than the CFLs as well.

Use healthy cleaning products and paints. Chemical cleaning products can release VOCs (volatile organic compounds) into your clinic environment. VOCs are not good for your health or your patient's health. Some people develop allergic reactions to VOCs; for this reason alone, it's a wise decision to reduce the VOCs in your clinic environment. Switch to eco-friendly cleaning products to reduce or eliminate this source of VOCs and possibly reduce costs. In addition, consider using low-VOC or no-VOC paints when putting that fresh coat of paint on your clinic.

Reduce waste. When you reduce your waste, you reduce overhead costs, save valuable materials, and minimize impact on landfills. Recycle bottles, cans, batteries, and paper as much as possible. Use glasses and mugs instead of disposable cups. And try laundering cloth bibs instead of using disposable paper ones—your patients just might appreciate the difference. Keep Your Dental Practice Fresh by Becoming “Green” By Robert Shaffer, AIA, CID, LEED AP

GREENING YOUR NEW CLINIC SPACE

When planning a new clinic space in an existing building or remodeling, you can take your practice to the next level by hiring a qualified LEED AP architect to help you plan a green clinic space within the boundaries of the existing building or landlord criteria. You can also incorporate the ideas discussed earlier for greening your current practice. Here are a few options to consider: Reduce energy usage. Design for high-efficiency lighting when installing new light fixtures. Specify low-energy appliances and equipment—look for the Energy Star label or similar programs. Install setback thermostats that turn down the furnaces or reduce air conditioning when your clinic is not occupied. Reduce water usage. Low-flow faucets are required by federal law;

if yours are not low-flow, consider installing them. Also consider reducing the number of sinks. Reducing the number of sinks has been found to reduce water usage; however, remember to plan for efficiency, too. You can also reduce water usage quite a bit by installing water-efficient toilets. Some toilets have two settings for the amount of flush needed. Use sustainable and formaldehyde-free materials. When possible, use sustainable materials, including recycled and recyclable products for tile, counters, and carpeting. These materials often look better and hold up to wear and tear longer than their traditional counterparts, saving you dollars in the long run. Cabinets should be specified with formaldehyde-free materials to reduce the VOCs in your environment. Many dental equipment suppliers have product lines to satisfy this need.

GREENING YOUR NEW CLINIC BUILDING

Designing a new clinic building allows you to make a significant difference in your green practice. Green buildings can be simple, complicated, or one of many levels in between. The most basic sustainable designs are self-sufficient and do not require special maintenance. More sophisticated systems, such as solar systems and mechanical devices, require a more calculated approach to maintenance and management. By helping you sort through the complexities of what sustainability means for your practice, a LEED AP architect specializing in dental clinic design can focus your building's design on the aspects most beneficial to your clinic and environment. A general contractor with experience using sustainable materials and processes will provide even more green value.

Design for energy efficiency and passive solar design. Talk to your architect about ways to work energy efficiency into your building's design, thereby reducing utility costs and making the best use of your budget. Since the energy efficiency of your building's shell directly affects your energy usage and costs, in the long run it's best to choose high-efficiency insulated windows with low-e glass and insulation levels that exceed required levels. Your architect should also consider ways of incorporating passive solar design. For example, large overhangs can be positioned to reduce heat gain in the summer but let in the sun's warmth during the colder months when the sun is lower in the sky.

Choose an efficient HVAC system. Your heating, ventilation, and air conditioning (HVAC) systems have a high impact on energy use and must be specified carefully. High-efficiency HVAC systems are readily available but must be appropriately designed for the space. If you are looking beyond traditional systems, a heat pump system with a geothermal heating and cooling source provides a great low-energy alternative with a possible ten-year payback, depending upon location and land availability. Geothermal systems use wells or piping to tap into the natural stability of the temperature of the Earth below the immediate surface.

Consider construction materials and methods. Construction materials and methods have a large impact on the sustainability of green buildings. Wherever possible, use local or regional materials to reduce transportation energy use and costs. Try to use materials with little waste or recyclable material as well. Some contractors use trash haulers whose construction dumpsters are sorted for recyclables, with at least 60 percent of the waste being recycled.

Use solar energy. Solar energy is free; make the most use of it you can. Design your new building to maximize the sun's potential and minimize its negative effects. Solar roof panels that heat water bring a fairly quick return on your investment, sometimes as short as three to five years. Solar photovoltaic panels that generate electricity take longer to provide a return,

but with the costs of these systems on the decline, this can be a realistic opportunity.

Consider cost-to-benefit ratios. Analyze power source options and other choices with the cost-to-benefit ratio (initial cost versus long-term benefits) in mind. For instance, if hot water solar panels will pay for themselves within five years and you plan to be in the location for fifteen, the solar panels are likely a good investment. Keep in mind that green improvements can add greatly to the resale value of your building. This benefit is likely to increase as traditional energy sources get more expensive.

Simple approaches. Now you know some simple approaches to green dentistry as well as some ideas that may involve more in-depth knowledge of how your building is put together. To help you meet your design goals, rely on a LEED AP architect who specializes in dental clinics, has studied sustainable construction, and practices green design. LEED AP architects have a wealth of knowledge that can help you attain the level of sustainability you want.

Set up your dental practice to be the shade of green you desire.

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Since 1994, The Foundation Architects has been a mainstay in the Twin Cities, Minnesota architecture community. The Foundation Architects designs offices, dental clinics, schools, homes and other facilities with an attention to detail and a focus on fun. The Foundation Architects is a member of the Minnesota Chapter of the American Institute of Architects. The Foundation Architects is LEED accredited and offers services in sustainable design. Learn more at foundationarch.com.