



# PRACTICE MANAGEMENT NOTES

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## What green means for OMS interiors

By James A. Strapko

**A**re you sick of green yet? Watching television, listening to radio, or reading magazines may cause listlessness and inability to focus when you encounter the word “green.” If the subject were not so important, this article would stop here! There is good reason to continue reading on the subject of green design—especially regarding health care interiors.

Green Guide for Health Care observes that health care interiors can make patients sicker (GGHC, Version 2.2, 2007, [www.gghc.org](http://www.gghc.org)). GGHC guidelines for self-certification of health care facilities promote standards for materials, products, and maintenance procedures. Maintaining acceptable indoor air quality is a primary goal. Patients in oral and maxillofacial surgery offices stay for relatively short periods, so the impact of office air quality on patient health may be less than in a hospital; still, OMSs and staff occupy the office for extended periods so it just makes sense to design an interior environment that does no harm.

The commonly used term “green” is equivalent to “sustainable,” which implies choosing products that conserve resources, last a long time, and minimize harm to environment and inhabitants. Extrapolating these ideas, sustainable products for OMS interiors can be evaluated in the following ways, with particular emphasis on indoor air quality (IAQ):

- Resource management
  - Waste handling in extraction, manufacture, and installation of materials
  - Use of regional materials
  - Use of rapidly renewable materials

- Toxicity/Indoor Environmental Quality
  - Low-emitting materials
  - Low-emitting installation
- Performance
  - Durability/long life
  - Low maintenance

If you build a sustainable OMS office right now, you can take advantage of a regulatory environment that is relatively unencumbered by mandatory rules for sustainability. In contrast, sustainable guidelines, certifications, and product information piles up at an exponential rate. In this mountain of green documents there is information useful to OMS design.

Where are experts who can find what is relevant and true? Architects and interior designers are generalists responsible for specifying products, though not all are skilled at evaluating products and writing specifications. Those with the letters LEED after their names have achieved accreditation in at least one aspect of the Leadership in Energy and Environmental Design (LEED) system certifying sustainable buildings. It is likely that few know everything; most are students of sustainable design, a rapidly developing field of knowledge. In this context it is appropriate to be skeptical regarding guidelines, product claims, and statements by experts.

At present, independent testing agencies offer a source of unbiased information about products. It is worth noting that agency certifications are limited to very specific dimensions of sustainability such as indoor air quality (IAQ). A product certified for IAQ may have negative

environmental impacts in other dimensions. The following are used for this discussion. Certifications by these agencies for products discussed here are predominantly for IAQ:

Scientific Certification Systems, SCS,  
[www.scs-certified.com](http://www.scs-certified.com), “SCS Certified Products Database”

Greenguard Environmental Institute,  
[www.greenguard.org](http://www.greenguard.org), “Find Products”

A previous issue of *PM Notes* (November/December 2008) addressed green, sustainable design generally and analyzed in some detail selection of carpet for an OMS office. This issue continues the flooring discussion.

Sustainable flooring for OMS offices can be separated into general categories: carpet, resilient flooring, and hard flooring. There are sustainable choices in all categories. Carpet was covered in a previous article so it will not be re-addressed here.

## Hard Flooring

Engineered wood and bamboo flooring products are manufactured by a variety of companies serving the residential market. While any might perform satisfactorily in low-traffic areas of an OMS office, it is necessary to check manufacturer and installer warranties covering commercial installation. Discuss any of these products with your designer before choosing.

Solid wood, engineered wood, and bamboo flooring are made of renewable materials and are certified by agencies that monitor responsible growing and harvesting practices. The Forest Stewardship Council (FSC) is one, Tropical Forest Foundation (TFF), another.

Bamboo is a grass that matures quickly, releasing oxygen as it grows. The flooring product that results is durable and easily maintained. Negatives include use of chemicals during growth, displacement of wildlife habitat, and need to import raw material from distant sources—primarily Asian. Recently, the Forest Stewardship Council (FSC) has placed its “FSC Pure” label on bamboo flooring, Plyboo, manufactured by Smith & Fong Company. FSC attention to growing practices and chain-of-custody addresses some of the negatives.

Where ceramic floor tile is specified in an OMS office, porcelain ceramic tile is typical. Porcelain ceramic tiles absorb less moisture than non-porcelain and are substantially harder. For restrooms and high-traffic public

entrances, porcelain ceramic tile is an appropriate choice for floor, base, and walls. A variety of colors, textures, and sizes are available. Many appear more like stone than glazed tile.

Examples of sustainable porcelain ceramic tile can be found in the Crossville EcoCycle line of products certified by Scientific Certification Systems (SCS) to have at least 40 percent pre-consumer recycled ceramic content ([ecocycle\\_handout.pdf](#), [www.crossvilleinc.com](http://www.crossvilleinc.com)). Other ceramic products certified as “low emitting” and “anti-microbial” can be found at [www.greenguard.org](http://www.greenguard.org). Beyond certifications a qualified designer can help interpret claims to sustainability made by particular ceramic tile manufacturers.

## Resilient Flooring

Cork sheet and tile flooring are composed of renewable tree bark or recycled bottle-cork waste with synthetic binders and a protective top coat. Considering resource conservation, manufacturing process, and indoor air quality, cork is a very sustainable product.

Though cork flooring is often seen in residential projects, it can be used in commercial settings as well. It is used in office reception areas and staff rooms. In an OMS office, traditional solid cork flooring would be limited to non-treatment areas that do not require frequent wet cleaning. New products may extend the use of cork into diagnostic and treatment areas. Factory-applied acrylic and urethane topcoats provide a durable wear surface. Rubber/cork composites offer additional durability and moisture resistance.

Regardless of what product is chosen, it is important to understand that cork is a natural material subject to color variation, fading, denting (high heels), and deterioration (one small chunk at a time). You should be prepared to view these signs of aging as patina. Check the manufacturer warranty before choosing a cork product.

Linoleum sheet or tile flooring is composed of renewable components such as cork, linseed oil, wood flour, and pine resin with ground stone and wood for color. Backing is jute or polyglass, a composite of fiberglass and polyester fibers. A protective topcoat is provided by waterborne acrylic.

Agricultural products such as jute, linseed oil, and pine resin, though renewable, contribute to groundwater

pollution and consume carbon. Ground stone is abundant, but not renewable. Manufacture of linoleum consumes wood flour, cork flour, and pre-consumer waste from other industrial processes. Waste generated manufacturing linoleum is recycled directly into new linoleum.

Linoleum is less durable than rubber and vinyl, and is not suitable for wet areas. (Paraphrased: 0951613.pdf, Federal Green Construction Guide for Specifiers, www.wbdg.org). Even though it can be seam-weld and has anti-bacterial properties, linoleum is not recommended by manufacturers for surgical treatment rooms.

Vinyl sheet and tile flooring includes polyvinyl chloride (PVC), which raises questions regarding sustainability. Assessing sustainability of products containing vinyl has become complex since 2004, when a United States Green Building Council (USGBC) task force recommended discontinuing the practice of giving LEED credit to projects that eliminate vinyl. Prior to this document, the verdict on vinyl was simple: vinyl = bad, no vinyl = good. Discontinuing credit for eliminating vinyl was not exactly an endorsement; however, it did recognize vinyl is no worse than alternatives in some products. The USGBC recommendation cited energy savings and durability as positive contributions of vinyl products to sustainable buildings. One of the product categories noted was vinyl flooring.

Persistence of negative attitudes toward vinyl products should not prevent using high quality vinyl flooring in appropriate areas of an OMS office – if there are no clearly superior sustainable products. For example, vinyl sheet flooring is recommended for surgical treatment rooms and associated spaces such as scrub areas, sterilization, lab (if any), and hallways based on superior performance. Armstrong, a manufacturer of a variety of sustainable and standard flooring products, highly recommends its vinyl sheet flooring for surgical rooms and associated areas; in contrast, Armstrong recommends against using its sustainable linoleum and bio-based flooring in the same areas (Recommended Applications – Resilient, 45696.pdf, www.armstrong.com).

Polymeric tile or plank is plastic flooring without PVC. It is similar to vinyl flooring in other respects.

Rubber sheet and tile flooring can be manufactured using either natural rubber or synthetic materials. Although natural rubber can be extracted from living plants in a sustainable process, most rubber flooring is not manufactured from natural sources. Synthetic

materials are used in a polymerization process that allows manufacturers to better control characteristics of resulting rubber flooring products.

Rubber flooring, though resilient, can be manufactured with a durable, non-porous surface that requires minimal maintenance.

Rubber flooring is appropriate for public, staff, diagnostic, and treatment areas in an OMS office – any location where a tough, resilient surface is required. In treatment rooms, where a seamless surface is called for, it is possible to specify rubber tile and sheet flooring with welded seams. To complement antimicrobial characteristics of rubber flooring material, antimicrobial adhesives are also available.

Life cycle cost analysis performed for a major hospital compared a variety of vinyl flooring products to rubber flooring and carpet. Costs included maintenance and replacement. A condensed version of results is shown below (Source: Rubber Flooring: Value and Beauty for the Long Term, 2008).

	First cost	15 year cost	Life cycle cost
Vinyl flooring	low	high	10 x initial cost
Rubber flooring	middle	low	2 x initial cost
Carpet	high	middle	9 x initial cost

Given the assumptions regarding maintenance and replacement, rubber flooring counters relatively high first cost with low life cycle cost.

Sustainable design does not limit your range of choices for interior products. Sustainable floor finishes for an OMS office can be found within standard product lines of major manufacturers. You do not need to choose unconventional or poor-performing products to go green. There is a need to evaluate specifications and warranties. Green certifications are helpful but do not tell the whole story of any product. Working with an interior designer or architect can help interpret competing claims of manufacturers. A creative designer can provide a sustainable concept for your OMS office that balances durable materials with opportunities for periodic renewal.

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Visit [aaoms.org](http://aaoms.org) for the full version of this article as it was condensed for publication.

## Call for Authors:

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This is number 111 in a series of articles on practice management and marketing for oral and maxillofacial surgeons developed under the auspices of the Committee on Practice Management and Professional Allied staff and AAOMS staff. *Practice Management Notes*, from 2002 to present, are available online at [aaoms.org](http://aaoms.org).

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