Good Green Materials
.3 CEU

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Beverly Vosko's
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Good Green Materials Handouts
Welcome to our Webinar!

The selection of suitable materials for a particular interior space is key to the interior designer's job. This CEU will concentrate specifically on materials and whether or not they are "sustainable" and good for the environment

Materials used for an Interior Design project have an impact on the environment:

1. Impact of material selection and use on larger environmental concerns affecting population as a whole such as depletion of resources and huge consumption of renewable fuel
2. Production of excessive or problematic waste
3. How a client's actual indoor environment – their actual space - will impact their own personal health, safety, welfare and well being

Though the impact of each project is relatively small each project makes its own contribution and collectively the impact of all projects on the environment as a whole is huge

What does Sustainability mean? Sustainability means meeting the needs of the present without compromising the ability of future generations to meet their own needs. We have a responsibility to sustain if not enhance our earth's natural environment and our nation's economy for future generations by:

1. Limiting Resource Depletion: Using but not abusing our natural resources so they are not depleted or permanently damaged
   and only using Materials that regenerate /grow back quickly once they have been used to insure that we will have them in the future
2. Avoiding Environmental Degradation
3. Working to Control Sources of Waste
4. Utilizing Materials that are Recycled, reused or that can be Reclaimed
   Making Sustainable items is making things that have a "small carbon footprint" and don't use a lot of "embodied energy

The carbon footprint of any item is "the amount of energy required to create that item and deliver it to its ultimate destination. An item with a "small carbon footprint" is an item that does not require the expenditure of a lot of energy to be created and delivered to its ultimate destination

The "Embodied Energy" of a product is the total energy required to produce that product from raw material extraction to installation ie the total energy required to procure/extract the raw materials required to make that product, process /manufacture those raw materials into the whatever product is being created, ship that product to its ultimate destination and install it in its ultimate destination
Products that requires a lot of energy to carry all this out, have a high Embodied Energy

Procurement: Raw materials that are easy to procure or extract have a smaller Carbon Footprint and a lower Embodied Energy than ones that are harder to procure or extract

Manufacturing: Products that don't expend a lot of energy to manufacture have a smaller Carbon Footprint and a lower Embodied Energy than ones that do

Some companies are pioneering more energy efficient modes of production or are using alternative/renewable energy sources to power their factories such as wind, or solar power. This is known as Carbon Offsetting

We should not use products, glues, adhesives or manufacturing processes that offgas or that are hazardous or toxic

Many companies are working to limit toxic omissions into the environment, by either

1. Not using harmful byproducts at all
2. Using closed loop processes to contain those harmful byproducts or
3. Treating and containing the waste that is created as a byproduct of their production process

Distribution: Items that are shipped long distances to reach their ultimate destination will probably have a larger carbon footprint and have a higher embodied energy than items that are built locally and therefore shipped only a short distance – so what is sustainable in one location may not be as sustainable in another location

L.E.E.D points can be earned for using regional" or "local" materials which is defined as a product that has been extracted, processed, manufactured and shipped or has been salvaged within a 500 mile radius of the site where it will ultimately be used - which means that all the steps in the process of creating it… from raw materials extraction to distribution to its end user must be less that 500 miles from products ultimate destination

Product Life Cycle Assessment looks at the sum total of all the energy necessary for a product throughout its entire product life-cycle from raw materials extraction to replacement and disposal and product packaging is as important as the product itself

Cradle to Cradle is a model that assesses whether a product will be either: biodegradable and disintegrate or be able to be recycled into something else or reused

Good quality products that last a long time before having to be disposed of are more sustainable than products built with "Built in Obsolescence" & break quickly

Abundant materials:

From a sustainability point of view it is best to choose materials that are abundant, or rapidly renewable and have the least undesirable impact on the depletion of resources, energy consumption and waste production

Sand, stone, slate and clay and Iron ore are abundant in nature

Bamboo, cork, wool, cotton, linoleum, natural rubber, agrifiber, strawboard, wheat board, sunflower seed board also sisal, seagrass, linen, jute, mohair, hemp and alpaca are rapidly renewable materials that can be re-grown in 10 years or less.

No wood is rapidly renewable because it can't be re-grown in 10 years or less

There are 3 types of materials and many materials result from combinations of these 3 levels of processing

Natural materials that remain unchanged or only need to be superficially modified for use, and/or cut into standard shapes or re-formed to be utilized which are far more sustainable than synthetic materials

Natural materials that need to be modified for practical use are called processed materials – some are sustainable and some are not

Synthetic materials do not exist in nature but have been brought into being or manufactured through artificial processes and most are not sustainable

Furniture Materials:

The selection of furniture materials has a huge impact on both the environment as a whole and on the indoor air quality of the person who lives with that furniture

Plastic is made using petroleum byproducts drawn from the production of fossil fuels which are being all too rapidly depleted so is not sustainable

There are 2 main families of plastics: thermoplastics which can be re-heated, re-cycled & re-used & thermosetting plastics such as melamines, laminates fiberglass, polyesters & urethanes which can't be re-melted so can't be recycled & they never decompose so they sit in landfills forever –also all plastics offgas

Wood from trees is a very popular furniture material

There are various types of woods that can be used: softwood, hardwood, veneer, plywood, particle board, MDF, laminated wood

Softwoods are fast growing evergreens such as pine, spruce, cedar, yew, cypress and fir that are in ample supply so are sustainable

Hardwood are deciduous trees such as mahogany, walnut, cherry, ebony, rosewood, satinwood and zebrawood. Many are more exotic and are scarce and becoming extinct – so are not that sustainable

Plywood is made by bonding together a number of layers of veneer. It is strong and is often used for kitchen cabinet bases topped with a layer of wood veneer.

Molded plywood is when the layers of veneer are pressed between molds while being glued together to form plywood so that the finished product retains the form of the mold

Particleboard is a sheet material made by pressing together wood chips and sawdust with an adhesive to make a board or panel and absorbs water

MDF or Medium Density Fiberboard is an engineered wood product formed by breaking down hardwood or softwood residuals into wood fibres, combining it with wax and a resin binder, and forming panels by applying high temperature and pressure. MDF is denser than plywood and doesn't absorb as much water as particleboard

Masonry are materials used in construction. Various masonry products are:

Stone including granite, marble, travertine, slate and limestone are natural and if are quarried, transported and cut by environmentally-minded companies, and purchased locally are sustainable

Clay, sand, rock and energy are consumed to create certain types of stone, brick, tile, concrete block and gypsum block(sheetrock)…but they are readily available so these products are still sustainable

Brick is a modular material made by firing special clays into units usually in a size of 2” by 4” by 8” and is a sustainable material

Concrete is made of cement, sand and small stones mixed with water which harden into concrete block and is a sustainable material ICF’s are made from concrete block

Reinforced concrete is a hybrid material using steel rods embedded in concrete- can be precast to form structural or surface elements to be used in the building process. It is fireproof and sustainable

Plaster and stucco are prepared in a semi-fluid state to be applied to a backing of brick, block or lathe of wood or metal - today a common substitute for plaster is plasterboard or gypsum board which is commonly known as sheetrock – which is a sheet material with a plasterlike core surfaced with a special paper and is sustainable

Ceramic Tile is fairly easy to extract but requires a lot of energy to be manufactured so is somewhat sustainable

Glass is an amorphous non-crystalline solid material that breaks down into sand over time so is sustainable

Metals include steel, stainless steel, iron, aluminum, brass, bronze and copper which are relatively natural but have to be produced and the process of producing those metals uses fuels and energy and generates related waste products and pollutants so metals are somewhat sustainable

Choose:

1. Fast growing softwoods which are evergreens such as pine, spruce, cedar, yew, cypress and fir that are in ample supply rather than scarce exotic hardwoods such as mahogany, walnut, cherry, ebony, rosewood, satinwood and zebrawood that are becoming extinct
2. Glass rather than plastics that do not bio-degrade and will sit in a landfill
3. Concrete, glass brick, tile and natural stone over hardwoods, plastic and aluminum which has a very energy intensive manufacturing process
4. Natural fibers such as wool, linen and silk over synthetic fibers such as nylon or polyester

Don’t choose:

Don’t use synthetics such as plastics, or solvents and adhesives that are made with formaldehyde which all offgas and ruin the indoor air quality of a space - especially in spaces without ventilation, such as the typical sealed interior common to many modern buildings and homes

Rapidly Renewable Materials have a 10 year lifecycle or less

Various rapidly renewable materials are:

Cork is an impermeable buoyant material made from cork oak tree bark that can be procured without harming the tree, has a 9 year lifecycle and is good for floors and fabric

Bamboo is made from the bamboo plant that grows rapidly and has a 6 year life cycle. It is made into flooring, furniture and fabric

Agrifiber is made from agricultural by-products such as straw and is made into strawboard, wheatboard and sunflower seed board and then into furniture

Natural rubber is a sticky, elastic solid produced from a milky liquid called "latex”

found and extracted from the inner bark of the branches and from the trunk of the rubber tree. It can be extracted annually without harming the tree
Soy is a plant that can be re-grown to full maturity in 10 years or less
Soy based products are used for building materials, spray foam insulation, plastics and thermoplastics, adhesives, barriers, sealants and coatings as well as for furniture manufacturing and seat cushioning
Textiles– There are a wide variety of fabrics on the market today
Natural fibers produced from plants such as cotton, jute, linen, silk, bamboo, sisal, seagrass and hemp and animal fibers such as wool, silk and leather have constantly renewable sources so are sustainable products . Wool is more sustainable than leather because you don't have to kill the animal to procure it
Synthetic fibers such as nylon, acrylic, modacrylic, rayon, polyester, acetate, and urethanes such as polyurethane offgas and have an adverse impact on indoor air quality and will never decompose so they are not sustainable and we should refrain from using them if possible
Rug fibers: Wool is the best natural rug fiber & nylon is best manmade rug fiber
Acrylic, polyester and olefin (polypropylene) are not sustainable
A new category of sustainable eco-friendly fabrics meet authentic 3rd party certifications
V.O.C. Free.paints and carpets don't offgas so are much better for your indoor air quality
Recycling and Reusing Materials
Recycling is breaking down/melting down products and reusing them to make totally different new items while reusing is using products again for the same use
Pre-consumer waste is waste products that have never been used by anyone
Post-consumer waste is waste products that have been used by consumers and discarded after they have been used
ECO by Cosentino and Vetrazo are countertop materials composed of only products that have reached the end of their lifecycle and which have been recycled so that they don't collect in landfills
Recycled concrete, recycled paper and recycled glass are also sustainable
Tile and wood can be reused as can reclaimed doors, reclaimed brick, reclaimed stone, reclaimed lumber, reclaimed hardware, reclaimed artifacts, antiques and antique architectural elements such as antique columns and fireplaces that are reclaimed from dilapidated homes that are being torn down
People now want sustainable materials so there is "Greenwashing" going on
7 Sins of Greenwashing

1. Sins of the Hidden Trade off - when a company stresses one sustainable aspect of a product that they sell while ignoring all the other aspects of that product that are not sustainable
2. Sin of No Proof - when a company's claims about the sustainability of a product are unverifiable because the company has no substantiation or verifiable proof to back them up
3. Sin of Vagueness - when a company makes claims that are very broad or uses vague language and encourages the consumer to draw their own usually overly green conclusions

4. Sin of Irrelevance **:** When a company makes claims that are truthful but totally unimportant in terms of sustainability of a product
5. Lesser of Two Evils Sin - when a company makes claims that are true about a product category that distract the consumer from realizing that the entire product category is not sustainable
6. Sin of Fibbing: when a company outright lies about the sustainability of a product
7. Use of False Labels**:** When companies create their own labels that resemble 3rd party certifications and use them on their products hoping that consumers will think those labels are those 3rd party certifications and that those products are endorsed by those 3rd parties and are green when in fact no endorsement actually exists and those products are not green

The best way to avoid Greenwashing is to use 3rd party Certifications

3rd Party Certification is when a recognized certification body not affiliated with any manufacturer or supplier independently certifies that a particular material or product meets a predefined set of specifications

Various 3rd party Certification are:

1. Green Seal- identifies products & services that don't emit harmful VOCs
2. Green Seal Standard- identifies products and services that don't emit harmful VOCs- primarily aerosols
3. Green Label-identifies carpets, adhesives and primarily carpet pads and cushions that don't emit harmful VOCs
4. Green Label Plus- sets even higher standards for VOC emissions for carpets, adhesives and carpet pads
5. Green Guard- identifies products & services that don't emit harmful VOCs
6. SCAQMD- was founded to improve outdoor air quality and reduce chemical exposure and air pollution
7. EcoLogo - identifies products & services that don't emit harmful VOCs
8. The Environmental Protection Agency which oversees
   Design for the Environmen - certifies many types of cleaners
   Water Sense identifies water efficient plumbing fixtures such as toilets, urinals, shower heads and kitchen and lavatory faucets
   Energy Star- certifies appliances that have demonstrated energy efficiency and also labels efficiently built homes and commercial buildings
9. The California Regulatory Board certifies furniture insuring that it doesn't offgas
10. Oeko Tex Standard 1000 00 – identifies sustainable fabrics and textile and clothing manufacturers
11. Forest Stewardship Council - oversees standards for forest management

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Biography

Beverly Vosko is a "Full Service", "High End", licensed ASID, TAID Interior Designer, President and founder of Beverly Vosko Interiors, formerly C. V. Design Inc. For over 25 years, she has been designing majestic homes across the United States and Europe, specializing in creating custom Residential, Commercial and Hospitality environments, be they Traditional, Transitional, Contemporary or Eclectic, that match her clients' every need. She graduated Phi Beta Kappa, Magna Cum Laude from the University of Pennsylvania, studied Art History at Harvard University, received her MBA in Marketing from Stern Graduate Business School, and her design and Antiques training from Sotheby's and the world renown Inchbald School of Design. She has taught Antiques and Interior Design at both Rice University and the University of Houston, currently conducts monthly Interior Design and Antique tours in and around Houston and teaches Interior Designers about Antiques, Interior Design and Universal Design /ADA codes for licensing Continuing Education via another one of her companies, InteriorDesign-ED. Interior Design is her passion. Please check out her websites, www.vosko.com and www.InteriorDesign-ED.com