

Interior and Exterior Finishes

Look for items that may be salvaged from a building slated to be torn down. Often the materials can be retrieved free of charge. This helps to stem the tide of construction waste that flows into landfills every day. When ordering new materials estimate the amount of material needed as accurately as possible. This will also help to prevent waste material from being sent to a landfill, as well as lowering construction costs.

The most common residential roofing material is asphalt shingles. The Greater Toronto Home Builders Association estimates that asphalt shingles make up 6% of new home construction waste.

Interior Finishes

Thought should be given throughout the design process to include reused materials whenever possible: bathtubs, hardwood floors, cabinets, etc. Furthermore, indoor air quality should be kept in mind. Thus, avoid using solvents, products that off gas volatile organic compounds (VOC's), and any product that might compromise the indoor air quality.

- The B.C. Advanced House uses medite 2, a stable non-off-gassing composite board, for all interior cabinets
- Water based glues and paints should be used wherever possible
- Avoid manufactured wood products that contain urea-formaldehyde

Flooring

- Avoid vinyl sheet flooring as it is a common source of volatile organic compounds (VOC's)
- Try to avoid carpeting as it acts as a sink for indoor pollutants, preventing them from being flushed out of the building by the ventilation system
- If carpeting is used, lay it without the use of adhesives – use tack strip instead. This will eliminate the off gassing from adhesives
- Carpet is now available which is made from recycled pop bottles (PET plastic)

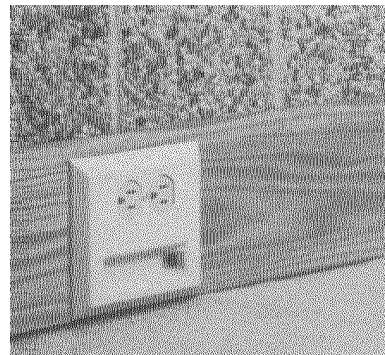
- The PET fibers have less than 0.5% moisture gain, whereas nylon absorbs 6% of moisture
- PET carpet does not need chemicals to make it stain resistant
- Dura Undercushion manufactures a carpet underlay made from recycled car tires
- Traffic Tile™, manufactured by Stoneware Tile Co. in Richmond, Arizona, is a tile product made from recycled glass and the grout and adhesive are both water based

Walls

- Recycled gypsum wall boards offer a more environmentally friendly alternative
- The use of interior glass walls helps to promote daylighting
- Scarfe Paints Ltd. Of Owen Sound, Ontario, manufacturers paint made from old paint. They offer:
 1. A 100% recycled interior latex in off-white
 2. A 90% recycled interior latex in 30 colours
 3. A 50% recycled/50% acrylic in 60 colours
 4. A block filler, to smooth over concrete blocks before the finish coat is applied, which is 100% recycled

Wiring

Today's fast paced electronics and computer industry is continually changing the communication demands on all buildings. The most advanced wiring systems might be obsolete in less than ten years. Thus, a better way of installing wiring is exterior to the wall.



Picture of a typical surface mounted runaway [1]
This can be achieved by a surfaced-mounted raceway. The raceway will allow for easier

upgrades of systems, without having to tear into the walls, and also helps to ensure the integrity of air and vapour barriers.

Ceiling Tiles

- Look for tiles that are low in particulate count
- The Prince George Native Friendship Centre uses panels produced by Armstrong Industries. The panels are back coated to ensure dimensional stability. The coating is water based. The tiles are made from renewable and natural materials such as starch, perlite and clay. The tile is made with 18-88% recycled material.

Exterior Finishes

Fiber Cement Siding and Roofing

- Fiber cement products feature long life and low maintenance while being more workable
- Composed of portland cement, ground sand, cellulose fiber, selected additives, and water
- Usually 1/4" or 5/16" thick
- Relatively lightweight at 2-3 lb/ft²
- Painting is required
- Retains a paint finish without cracking or blistering
- A typical warranty is 50 years
- They absorb moisture, thus there is concern over performance in freeze-thaw cycles
- Dust created when sawing, cutting, etc. may cause lung and eye irritation
- When used for roofing tiles, an internal pigment is added in the mixture

Manufactured Stone Veneer

- Lightweight and easy to install
- A mixture of portland cement, mineral oxide pigments, and lightweight aggregates
- Thickness varies from 1" to 3"
- Weighs 8-12 lb/ft²
- Is noncombustible
- May be used around fireplace
- Occasional washing to remove surface dirt and dust is the only maintenance required

Cementitious Roof Tiles

- The B.C. Advanced House uses these tiles, which incorporate C-MAX Technology's patented process
- The tiles use waste or recycled cellulose fiber and by-products of the fertilizer industry
- Tiles are weather and fire resistant
- Half the weight of comparable concrete products
- Can be moulded into any shape or size

Galvanized Steel Tiles

- The Waterloo Region Green Home uses 26-gauge zinc-coated galvanized barrier steel for the roofing tiles. The product is called Tile Master and is manufactured by Stelco in Hamilton, Ontario. The top is covered with an 8 mm film of plasticized vinyl coating to protect from corrosion. After 50 years, the tiles will only use 5% of their original colour. Mold and mildew will not build up on the tiles as they would on asphalt or cedar shingles. Plus, when the roof is ultimately replaced, the tiles are 100% recyclable.

References

1. Bynum, Richard T. Jr. and Daniel L Rubino. Handbook of Alternative Building Materials in Residential Construction. McGraw-Hill, Toronto, ON, 1999. pg. 11-20.