



Structural



This is a structural material that is made from agricultural waste and mycelium, an alternative to wood. I chose this as a material for a strong, rigid and straight structure because it has key components into using a sustainable and alternative material for construction. Components like being light weight, low carbon footprint, low toxicity, and biodegradable. It's easily processed into any shape or form, and it cheaper to produce since it has zero waste.



Another alternative material for structure is this rigid material that is made of corrugated paper and resin composite. It's a biodegradable material that is sourced from the wood industry waste, and the resin is formaldehyde free. It's used for furniture and construction since it has high strength and low weight.

Food Production

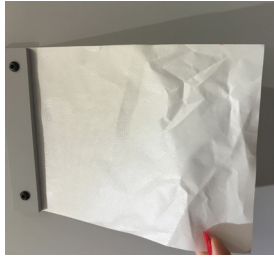


For food production a flexible or semi-flexible material is needed. This alternative material for the flooring underlayment of food production is made from granules of rubber and cork. It provides vibration damping capacity and acoustic insulation for the planting, and is a useful light weight material.

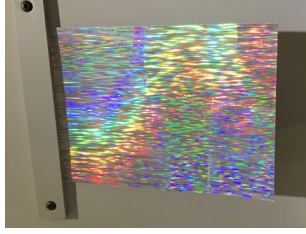


This is another material that can be used for food production due to its great skin material of flexibility. It is a light weight material made from a secretion from bacteria fed sugary solution in a warm bath (pineapple juice). It is impervious to water and has good mechanical properties such as strength. It has low toxicity, low carbon footprint, and is compostable.

Solar Energy Collection or Solar Energy Reflection



This is an alternative material for solar energy reflection because it contains many elements (polyethylene foam, nonwoven polyester, polyurethane and polypropylene) that reflect it as well as cools. The texture is flexible, biocompatible, light weight and compostable.



This alternative material can also be used for solar energy reflection due to its laminations created by transferring a thin layer of aluminum, onto the paperboard formed polymer film that is then recycled. It's lightweight, flexible, biodegradable and low toxicity.

Water Proofing and Water Collection or Water Drainage



This alternative material can be used for water proofing and water collection due to its excellent qualities. This material is woven mat from highly durable resin-coated paper yarn, which makes it abrasion resistant and water repellent. It takes the woven technique from Japanese traditional carpets from rice straws, thus also allowing it to bead off water and collect the water elsewhere. It is a lightweight material, as well as biodegradable and compostable.



This material has so many great qualities I chose to use it again for a waterproof material. It's many elements like lightweight, low toxicity, low carbon footprint, compostable, and biodegradable are all such key elements for a sustainable material. It has a skin and flexible texture, is waterproof, and had a high strength property.

Thermic Insulation and Cooling



This material can be used as an alternative material for thermic insulation due to its significant qualities. It is a lightweight material that is made from recycled PET felt, fabricated in structures designed to replace foam and down fill. The felt element is what makes this a good thermal insulator but offers better breathability than foam. To top it off, it is an easily recyclable material.



This last material can be an alternative material used as a cooling element. It has a thin and flexible texture, and it is made from banana plant trunks. It is biodegradable, has low toxicity and is a light weight material. It is used to block out the sun to provide a cooling effect.