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## **ECO FRIENDLY CONSTRUCTION METHODS AND MATERIALS**

Every year the humanity becomes smarter. Finally we have realized that we should change this situation and start to live in harmony with nature. The governments of many countries such as Norway, Switzerland, Germany, the USA and many other developed countries pay much attention to the projects of eco-houses and even eco-villages.

What does the term of «ecological way of life» mean? It includes two components: saving natural resources and saving human health. Everybody agrees that health is the main value for every man. But we mustn't forget about natural resources. Unfortunately it's very difficult to combine these two things. They often come in conflict with the traditional way of life. Finally we've found how to solve this problem.

Eco-friendly, or ecological, construction is building a structure that is beneficial or non-harmful to the environment, and resource efficient. Otherwise known as green building, this type of construction is efficient in its use of local and renewable materials, and in the energy required to build it, and the energy generated while being within it.

Eco-friendly construction has developed in response to the knowledge that buildings have an often negative impact upon our environment and our natural resources. This includes transporting materials hundreds or thousands of miles, which has a negative impact in the energy required to transport them,

Eco-friendly ways to build a house. Eco-Friendly ways to build houses greatly lessens the impact humans put on the natural ecosystem. This is why more and more homeowners consider getting their new home constructed using these eco-friendly building techniques.

Many options are now available to those wishing to design and build an eco-friendly dwelling. Architects, engineers and builders worldwide are now using construction techniques that have been developed throughout human history, in response to local environmental concerns and the physical resource opportunities available, coupled with 21st century technological refinements.

This range from rammed earth construction, which involves clay-based material mixed with water and then rammed into brick or solid wall form, suitable in hot and dry climates, to straw bale houses, literally using bales of straw as the core structure. Straw is a great insulator, is a breathable material that filters the air passing through it, and contrary to expectation, is fire-resistant when compressed. And it is low cost.

In more conventional building construction, it is how technology and building materials merge and create ecological resources that are the key to green success, as well as using simple and readily available materials.

For example, using pulped recycled paper for roof insulation is a simple but highly effective ecological resource. The damage to human health from asbestos insulation, laid out in rolls in thousands of UK homes, is now well known. Asbestos also takes hundreds of years to decompose in landfill.

Other features of an ecological building might include:

- The varied use of solar panels for domestic hot water heating,
- Water conservation, possibly including biological waste water treatment and re-use, and the simple collection and recycling of rainwater for garden use,
- Low energy light bulbs, which can last up to 100 times longer than regular bulbs,
- Cellulose insulation (like the paper in the above example),
- Non-toxic or lead-free paints and wood preservatives,
- Locally-grown and harvested timber from sustainably managed forests.

Building in wood provides great benefits when combined with clever planning, high precision and well monitored construction and high quality implementation.

Over hundreds of years timber has been used to build quality homes and buildings which are still standing strong centuries later, shown by many examples of very old timber buildings in Switzerland, Germany, Scandinavia, the UK, Turkey and Japan, some of which were built hundreds of years ago (the most well know example of an ancient timber building is the 1300 year old temple complex of Nara).

Wood helps to minimize energy consumption in several ways. In terms of embodied energy, which includes the energy required to extract, process, manufacture, transport, construct and maintain a material or product.

Some arguments to build wooden house:

1. Wooden houses can be built and installed in any season.
2. Whether you're the type of person who likes to pay attention to the smallest details, than it's good to know that the necessary time needed to build a house it's about 100 days. Keep in mind though, that you can build a wooden house, all finished, in just 30 days.
3. Also, wood is a highly effective insulator. Resistance that impedes the flow of heat flux is 300 times greater than steel and 10 times greater than concrete. That means cool in the summer and warm in the winter, faster and cheaper than houses constructed of other materials.
4. Another good news is that you should not be afraid of earthquakes. Because wood is an elastic material.
5. If you care for others then you will be glad to know that the wood is 100% natural, 100% recyclable and does not pollute the environment in the manufacturing process (as is happening with concrete or steel).
6. The price of such a construction is significantly lower, mainly due to the rapidity of construction
7. Thermal insulation of a wooden house is superior to traditional houses. Mineral wool used have superior thermal coefficients and the amount increased its wooden structure, creating thermal comfort.
8. The positive energy of houses is well known and appreciated by people with a high standard of living and culture such as Norway, Switzerland, Germany and France.
9. The speed of execution of a wooden house is a clear advantage. This leads to both saving materials and reducing disturbance from the client
10. Wooden houses can be green construction, which meet the highest standards in this regard. material of wood (wood fiber, wood wool, cellulose, OSB without formaldehyde).

Wood is a building material with a positive CO<sub>2</sub> balance and requires less primary energy during the build. Wood uses solar energy to grow and stores vast amounts of carbon dioxide during photosynthesis. A cubic meter of timber thus locks away around one ton of the harmful greenhouse gas. At least another ton is saved when using wood instead of other building material.

Living and working in eco timber houses means being in a pleasant and healthy environment. Timber is diffusible and hygroscopic. It filters the air and thus provides a fresh and healthy climate in a building. It has humidity regulating properties which have positive effects on the atmospheric conditions of a room. Timber smells good, looks good and feels good and thus has a positive effect on our wellbeing. Timber positively affects all human senses.

Green house building materials: recycled timber could be used for studs. Insulation made of used materials as jeans can be used for the walls. Materials that last a very long time minimize the amount of waste that's dumped into landfills and save natural resources that would otherwise be utilized to replace them. Such products include: stand and seam metal roofing, stone and bricks, and cement board siding. It's vital to utilize materials that don't emit toxins (labeled formaldehyde-free for particleboard and LOW-VOC for paint).

Alternative Source of Energy. Sources of alternative energy are becoming more and more common in private houses. Some systems produce electric power directly, like the photovoltaic or the PV or solar electric and wind power systems. Others, like the solar and geothermal hot water make use of the sun to heat water for domestic use or for heating and cooling a room. Normally, the solar hot water and PV systems are installed on the roof, while wind systems have land requirements.

Water Management. Regulating water usage is often an ignored element in eco-friendly houses. Rainwater running off the roof can be funneled to rain barrels to be used in lawns and gardens. Also, installing low-flow toilets can help conserve water.

But in renovating and building homes, as individual homeowners we can do something meaningful for the planet – cutting energy use, saving water and also cutting waste. Considering the relationship between people, material and the environment is of utmost importance when building a home.

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## **КОМПОНЕНТИ ПРОФЕСІЙНОЇ КОМПЕТЕНТНОСТІ ФАХІВЦІВ ЗІ ЗВ'ЯЗКІВ З ГРОМАДСЬКІСТЮ**

Основною вимогою до сучасної вищої школи є підготовка висококваліфікованого, компетентного фахівця. Тому переважна більшість вищих навчальних закладів орієнтується на формування основних професійних компетентностей у майбутніх випускників.

Згідно до вимог освітньо-професійної програми метою підготовки майбутніх фахівців зі зв'язків з громадськістю є формування загальнокультурних та професійних компетентностей в галузі зв'язків з громадськістю. В результаті