

ECO MATERIALS



Wood used as a structural and finishing material

brick: *mattoni*
 clay: *argilla*
 cork: *sughero*
 fixture: *infisso*
 glue: *colla*
 timber: *legname*
 wax: *cera*

Building materials have the purpose of making the place where we live safe and comfortable. They satisfy our desire for beauty, respond to technical needs but also influence our health and the way we feel inside our homes.

These materials should be eco-friendly, sustainable and need to be chosen paying great attention to any negative effect on the environment, such as the production of toxic gases, water pollution and soil pollution.

They can be sorted into three groups:

- materials employed in the structure of the building (foundations, walls, attic, etc.)
- materials used to improve the performance of the building (insulations, protections, **fixtures**)
- finishing materials which complete the structure of the building and are the ones which come into contact with the people living in it (paints, **glues**, floors, etc.)

In the process of building a house, each material used should interact with the others and contribute to the global performance of the building. While it may be quite simple to identify and select eco-friendly materials, it is often more complicated to understand how one may interact with others. Natural materials can be employed within an inadequate context and this can make them useless or even harmful.

To sum up, eco-materials should:

- be biodegradable and recyclable
- minimize the effects of toxic and hazardous substances on health
- contribute to create a more sustainable environmental future.

They can do this by:

- minimising their impact on the environment
- avoiding or reducing dependence on non-renewable energy sources
- increasing indoor air quality
- increasing the efficiency of resources
- avoiding or reducing problems connected to allergies.

Encouraging the use of such materials will therefore have several social and environmental benefits as well as provide quality buildings and products.

Among the materials which can be used in bio-architecture, we can find **timber**, **brick**, stone, **clay** (for structures), **cork**, jute, cellulose fibre (used as insulating materials), natural paints and natural **waxes** (for finishing).



1  **Decide if the following statements are true or false and correct the false ones.**

- | | | |
|---|--------------------------|--------------------------|
| 1. Building materials have the main purpose of satisfying our desire for beauty. | T | F |
| 2. Bio-architecture building materials have to respect the environment as much as possible, from their production to their use. | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. As well as choosing natural materials, it is important to consider how each material employed interacts with others. | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. There are either good or bad materials. | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. In bio-architecture, the possibility of recycling a material is an important fact in determining its choice. | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Cork is an example of an eco-friendly material used in building structures. | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Natural products should also be chosen for finishing. | <input type="checkbox"/> | <input type="checkbox"/> |

2  **Listen to a description of cork from a website and then complete its summary.**

Cork has been traditionally used for bulletin boards and bottle (1)..... and in architecture has been mainly utilized under (2)..... and as insulating material. Unlike other trees used as construction materials, cork renews constantly, because it is the (3)..... of the tree that grows back once removed. Cork pieces are heated and compressed into (4)..... or without using adhesives or glues. Owing to its (5)..... composition, cork is not easily (6)..... This makes it possible to (7)..... old pieces. All these characteristics make cork an (8)..... -friendly material.



3  **Complete these notes about eco-materials.**

Used for	a.
	b.
	c. <i>finishing</i>
They should	a.
	b.
	c.
They can contribute to the protection of the environment because they	a.
	b. <i>increase the efficiency of resources</i>
	c.