

**BACCALURÉATS GÉNÉRAL ET TECHNOLOGIQUE
SESSION 2014**

**ÉPREUVE SPÉCIFIQUE MENTION « SECTION EUROPÉENNE OU DE LANGUE ORIENTALE »
Académies de Paris – Créteil – Versailles**

Anglais / STI2D enseignement transversal

Sujet n°1

Thème: développement durable / environnement

Wood residential construction



Document 1: THE ENVIRONMENTAL BENEFITS OF CHOOSING WOOD FOR RESIDENTIAL CONSTRUCTION

Numerous independent studies conducted by researchers around the world have shown that wood products outperform substitute products like steel and concrete across the full spectrum of environmental impact measures.

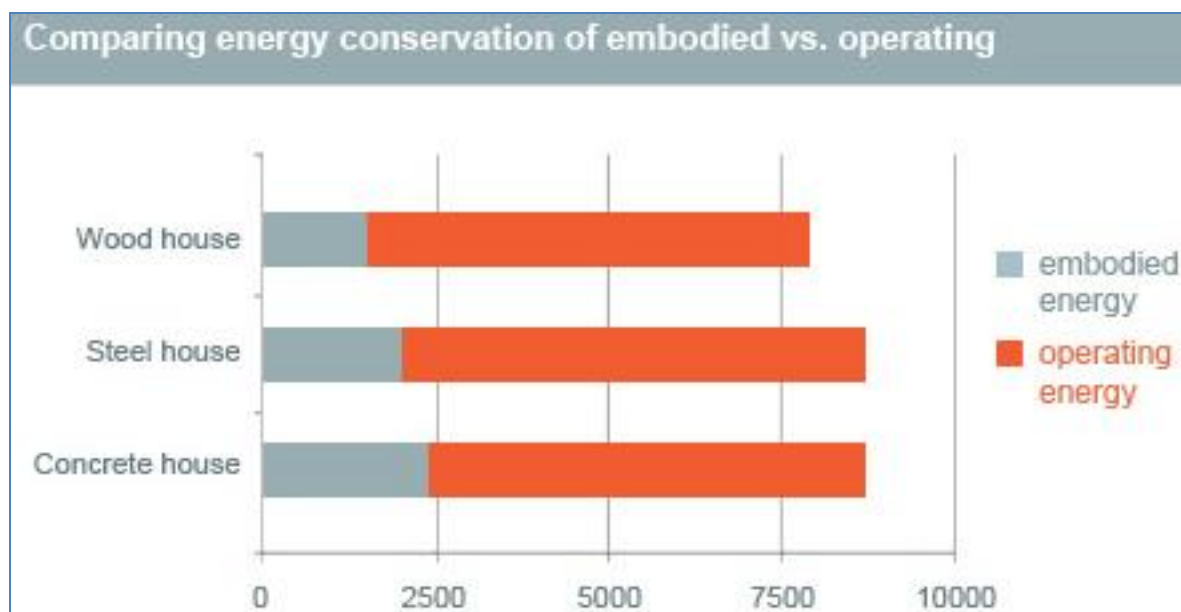
Buildings made of wood can last just as long as buildings made of masonry¹, concrete or steel. No meaningful relationship exists between structural material and average service life. The graph below compares the environmental impact of a typical wood-frame house to that of similar houses built out of steel and concrete. It sets out total embodied² and operating³ energy consumed over a 20-year period for each building type.

Wood construction also delivers energy conservation benefits over the in-service life of the building. Compared to steel or concrete construction methods, wood buildings have less embodied energy and use less energy in their operation.

Wood is an efficient insulator because its cellular structure contains air pockets that limit its ability to conduct heat. By comparison, steel and concrete create thermal bridges that facilitate heat transfer through a building's walls, increasing energy consumption for the building's heating and ventilation.

Wood building products have an important role to play with respect to climate change policy and programs, since the carbon stored in trees continues to be stored in forest products. When a tree is cut down, the carbon it stored during its life cycle is retained within its cellular structure. The harvesting of trees and manufacturing of forest products transfers the carbon from the forests to the products. Those products, when used as building materials, remain in use and store carbon for long periods of time.

Document 2:

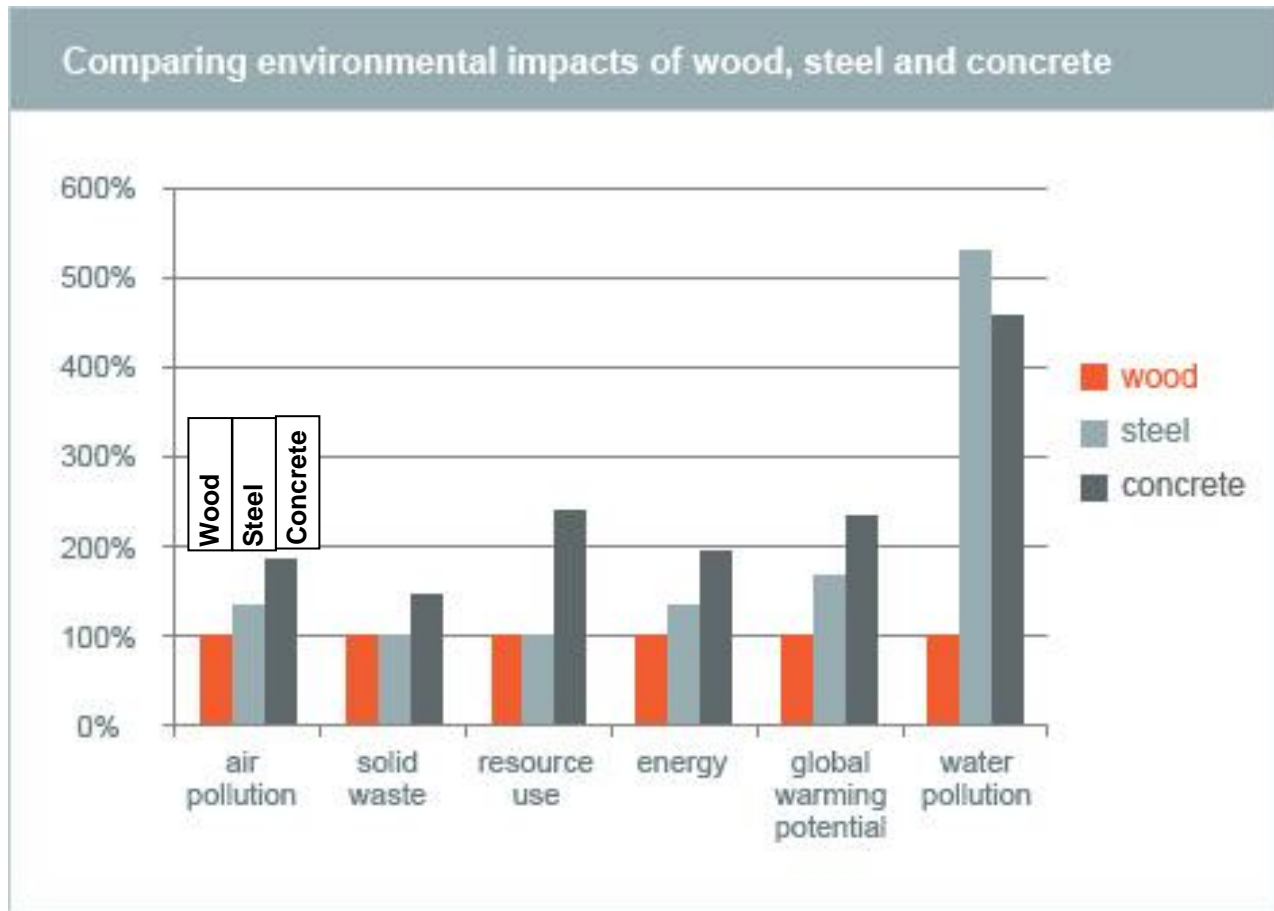


¹ Masonry : maçonnerie

² Embodied energy : énergie utilisée pour l'extraction des matières premières et la construction de la maison

³ Operating energy : énergie consommée pendant l'utilisation de la maison

Document 3:



Adapted from:

<http://www.canfor.com/why-wood/comparing-wood-and-non-renewable-materials>

www.afandpa.org/Content/NavigationMenu/Wood_Products/Green_Building/Green_building_Fact_Sheets/GBfact3.pdf

www.afandpa.org/Content/NavigationMenu/Wood_Products/Green_Building/Green_building_Fact_Sheets/GBfact1wood.pdf

To make your presentation, you may use the following suggestions:

- 1) Using documents 1, 2 and 3, talk about the uses and the benefits of wood constructions.
- 2) Can you think of any drawbacks to wood constructions?