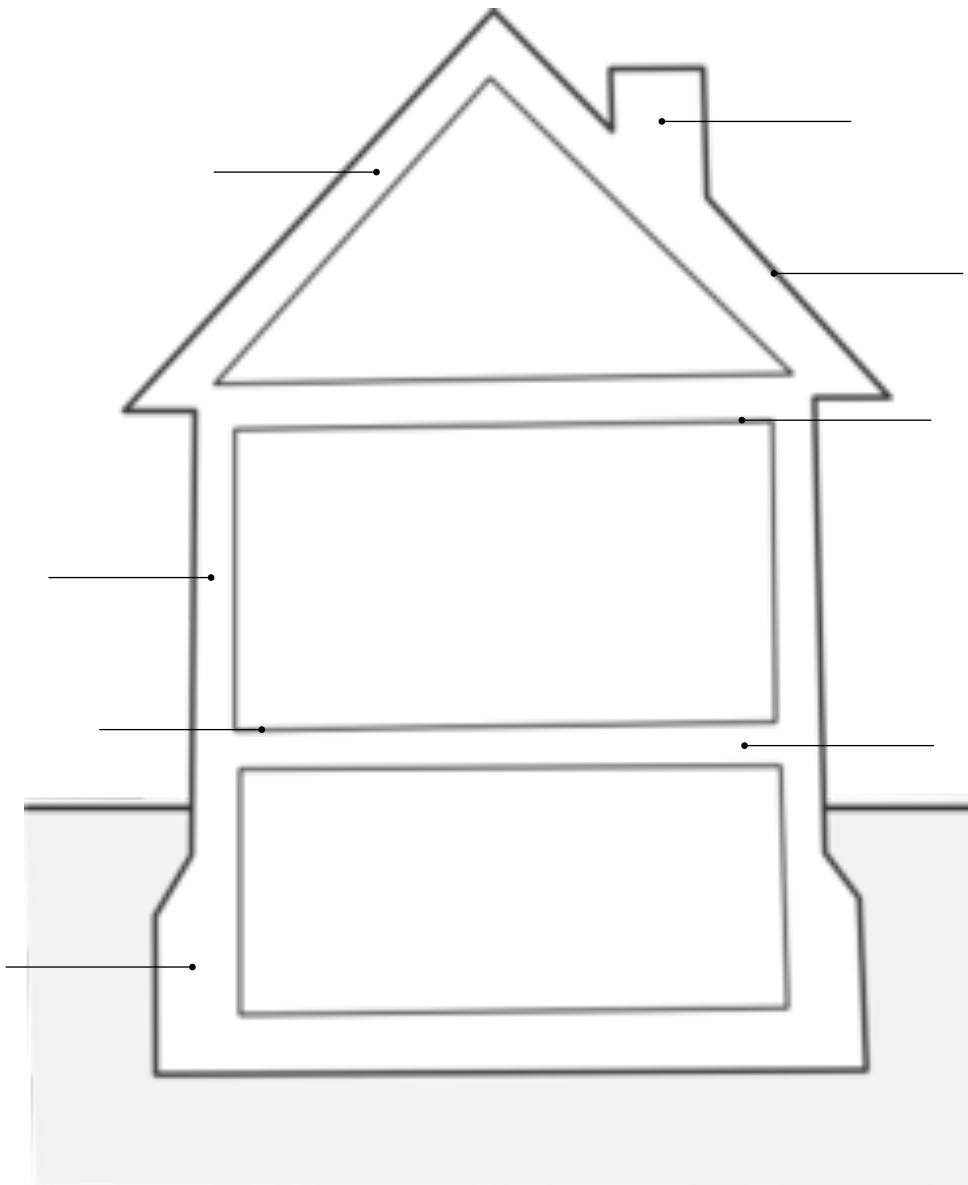


CONSTRUCTION TECHNOLOGY

Chapter 10: Construction Materials

1. List all of the materials that you know of that are commonly used to construct the parts of the structure labelled.



2. What percentage of the total lifetime energy of a building is accounted for by construction materials?

3. What does this mean?

4. Why is this important?

5. Describe the balance that has to be struck, from an energy perspective, when selecting construction materials.

6. Explain the following terms, in relation to sustainable construction materials:

low energy use:

example:

minimise the use of new resources:

example:

whole unprocessed materials:

example:

low embodied energy:

example:

can be reused:

example:

contribute to a healthy indoor environment:

example:

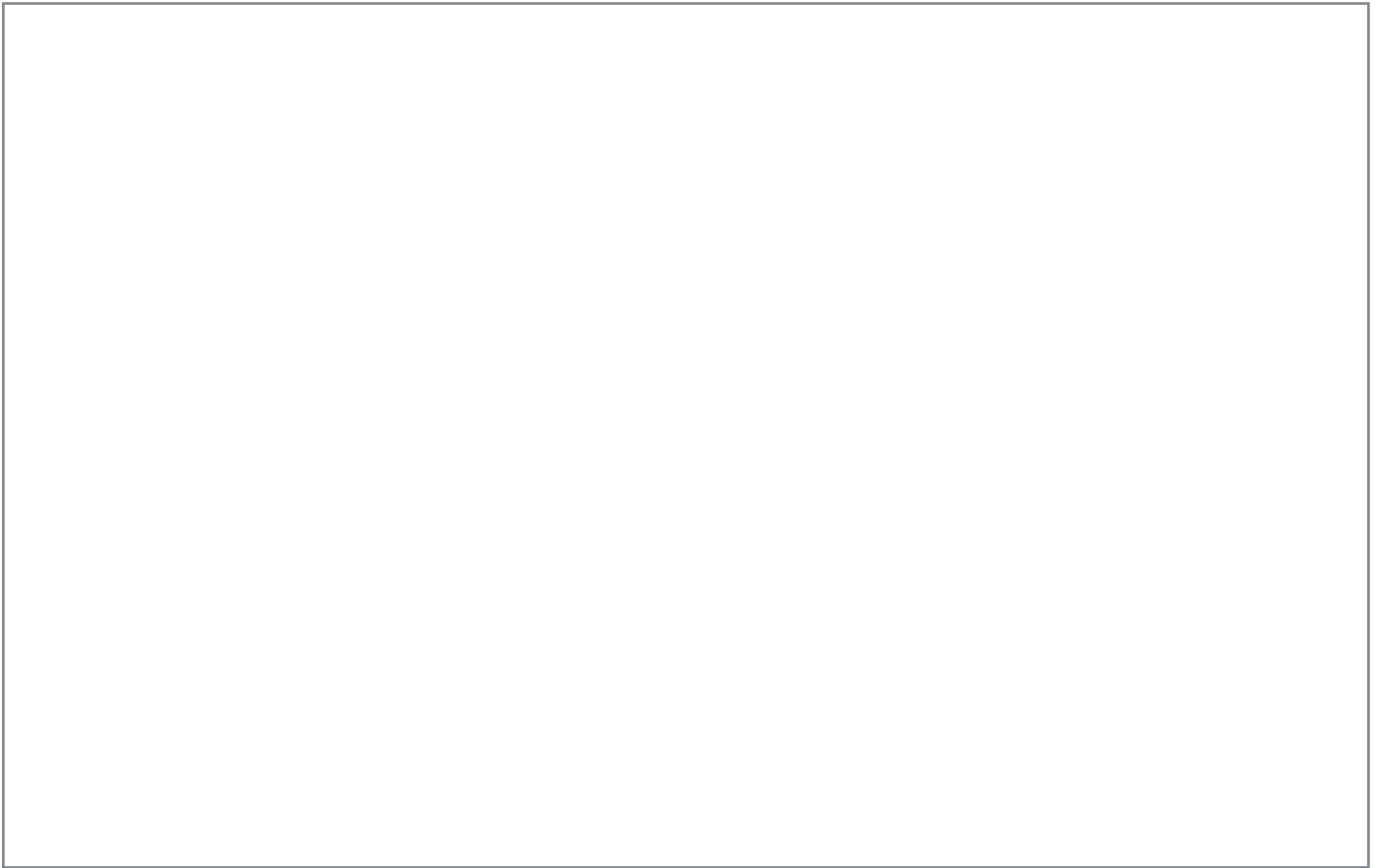
7. Define 'embodied energy':

8. Compare the embodied energy of a wall built using timber (e.g. timber frame) and a wall built using concrete blocks.

9. Explain the guidelines that the concept of embodied energy provides for selecting sustainable construction materials.

10. Outline the benefits of using local suppliers of construction materials.

11. Explain, using a note and a sketch, the concept of life cycle assessment.



12. Explain the following terms, in relation to the minimisation of construction waste:

reduce:

example:

re-use:

example:

recycle:

example:

recover:

example:

13. Explain, using notes, three strategies to reduce construction waste.

14. Explain, in your own words, the following terms, in relation to the physical properties of construction materials:

weight:

compressive strength:

tensile strength:

thermal conductivity:

air permeability:

vapour permeability:
