

SRT257 Assignment 3 – Construction and Materiality Report



Optional Task : Materiality analysis

You will analyse what materials are used for the building envelope of your House, and calculate the embodied energy and emissions based on calculated **material quantities** and **embodied factors** from inventories. Detailed tasks include:

- 1) Analysing the materiality of the external envelope for each element, such as the exterior wall, roof, window, and floor. You may use graphics to illustrate the material layers and material types.
- 2) Quantifying the primary materials: you need to calculate **the material volume** and then convert to **weight (kg)** for each type of materials;
- 3) Calculating embodied energy and CO₂: you need to look up embodied factors listed in the inventory, and then calculate the embodied energy and emissions using material weight and embodied factors;
- 4) Analysing recyclability of the relevant materials.
 - Whether it was made from a renewable source;
 - How recyclable it is and/or whether it could be substituted by recycled material.
- 5) Discussing the implications of your findings for the redesign of your House.

Completing this assignment will help you to learn: (1) what a house is built of; and (2) how the selection of materials used might affect a building's ecological performance.

Note:

- You might use drawings or figures to label the materiality in your report.
- You may use the suggested inventory to look up embodied factors:

<http://www.organicexplorer.co.nz/site/organicexplore/files/ICE%20Version%201.6a.pdf>