

SELECTION OF CONSTRUCTION MATERIALS.

By: Eco-Works Construction Limited.

While designs are crucial to a building's construction, the materials used to create structures are among the most important aspects of crafting. Therefore selecting the appropriate materials to see the design of an upcoming project can significantly affect many aspects of the construction process. Therefore we base the proper selection of materials to be used in a particular construction project on the following factors.

- **Strength:** Here we look at the capacity of a material to resist failure caused by loads acting on it. The load may be compressive, tensile or bending. We achieve this by looking at the ultimate load taken by the material with its cross sectional area.
- **Availability of materials:** This plays a major role in the budget of the project .We usually focus on the locally available materials which may result in great cut in the budget of the Project. Using locally available materials reduces the transportation cost, labor cost and probability of any damage to the materials.
- **Durability:** Here we look at the ability of a building or any of its components to perform the required functions in a service environment over time without unforeseen costs for maintenance.
- **Workability:** This mostly applies to our concrete placement; here we look at the property of raw or fresh concrete mixture. In other words it's the ease of placement and workable concrete meaning the concrete which can be placed and can be compacted easily without any segregation.
- **Ease of Transportation:** We base our approach to this objective using logistic analysis by minimizing the combination of vehicles, hours, or miles required to deliver the Construction materials.
- **Cost:** This depends on the clients preferences on the material types they would love to use in their project, therefore the costs vary from one structure to the other.
- **Aesthetics:** As a firm we are concerned with beauty or the appreciation of beauty for the client. For example putting up finishes like Faced, cladding tiles etc. We focus much on the appearance of the material and how it can benefit our clients. We love it when we hear that what we delivered to our clients is appreciated
- **Resistance to Weather and Natural Elements:** Here we focus much on fabricating a building or structure that is able to withstand the sudden different circumstances such as fire, heat, sound etc. This depends on the location and what our clients would prefer.
- **Ease of Cleaning:** Here we look on the porosity of the surface that provides voids for dirt entrapment, presence of surface coatings, uniform coverage of the coating, and toughness of the surface coating to stand-up.
- **Environment:** If the structure we are constructing is located in an area with corrosive environments, additional considerations must be taken during the material section process. We watch out for materials that become corroded and hence we omit such

from our budgets or alternatively we utilize paints and other protective coatings that can reduce corrosion over time.1.1

Factors Influencing Economy of a Building Material

- Availability of Material
- Cost of Raw Materials (Cost of Unprocessed Material)
- Manufacturing Costs (Cost of Processed Material)
- Transportation Cost
- Cost of Placing and Maintenance Cost