NED University of Engineering and Technology

Final Year Project Showcase Batch-2017
Year 2021

Department: Urban & Infrastructure Engineering **Programme:** Urban & Infrastructure Engineering		
1	**Project Idea**	**Investigation of Different Types of Masonry Blocks on the Basis of Strength, Weight and Cost**
2	**Process**	In this study the efforts are made to investigate different blocks in order to optimize the strength weight and cost. Materials used in these masonry blocks are: sawdust, fly ash, light-weight aggregates, foaming agent, plastic waste, cement, fine aggregate, coarse aggregates and polystyrene.
3	**Outcome**	Result shows that among all of the masonry blocks, the plastic blocks are very cheap as compared to others. While, sawdust concrete blocks has highest compressive strength.
4	**Evidence (Theoretical Basis)**	Blocks were made in the lab and their weight and compressive strength were determined.
5	**Competitive Advantage or Unique Selling Proposition** (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them). Please keep relevant options, delete the rest of them, and correct the sequence	
a	**Cost Reduction of Existing Product**	The cost is about half of the conventional blocks in the market while strength is competitive.
b	**Process Improvement which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process** (e.g. What is the issue is current process and what improvement you suggests)	The conventional masonry blocks are heavy and causes more dead weight to the structures and thus not suitable for high rise construction. The falling of masonry in case of lateral load such as earthquake can cause more fatality. The cost is also higher and this require an alternate which is lighter and cost effective and compettitve in strength. The use of lighter masonry blocks also reduce the cost of structure.
c	**Attainment of any SDG** (e.g. How it is achieved and why it is necessary for the region)	**SDG# 9 Industry Innovationa and infrastructure** **SDG# 12 Responsible Consumption and Production** Use of waste materials, less use of cement and aggregates thus can cause reduction in CO2 and dust. The reuse of plastic is also environment friendly.
d	**Expanding of Market share** (e.g. how it expand and what is the problem with the current market	The use of recycling or waste material is now increasing and the share is also expanding in the market.
f	**Any Environmental Aspect** (e.g. carbon reduction, energy-efficient, etc.)	Reduction in CO2, reuse of waste specially plastic which can create good impact on marine life.
6	**Target Market** (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service	Construction industry
7	**Team Members** (Names & Roll No.)	1. Mumtaz Ahmed UE-17023 2. Shahzaib Habib UE-17030 3. Mairaj Khalid UE-17038

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10	**Pictures (If any)**