**Project Name: WeBuild**

Documentation for the WeBuild Project for applying for RobiVentures.

**About the Project: A Concrete 3D printer**

By this time we all know about the idea of 3D printing. In short, it uses plastic instead of ink and it prints on the printer base so that we get our desired plastic product prototype. Nowadays the 3D print is providing solutions for many critical industries. From making a low-cost prototype of a product for testing before mass production to printing organs to transplant on the Human body.

So imagine if we can use this technology to improve our Construction Industry which is basically slow & laborious and most of the time it is not in touch of recent technologies, especially in Bangladesh.

**Constraints:**

Main constraints for this project are listed below:

1. Make the printer large enough to print an ‘Entire House’, which includes the selection of the printer type, find the optimum size of the printer and customized programming of the printer,
2. Design the proper Concrete Mix-design to use with the printer,
3. Design a printable structure, and finally
4. Start printing.
5. **How to Solve the Problems: Size of the printer**

The main problem is the printer size. First, we need to make one scaled-down prototype for the printer. After the successful run of the small printer, we can go for the live sized printer.

1. **How to Solve the Problems: Type of the printer**

To make this project live, there are two options for the type of printer.

1. Robotic arm printer,
2. Gantry printer.

We need to finalize the type of printer after detailed testing of both the options.

1. **How to Solve the Problems: Customized programming for the printer**

Our plan is to use Arduino to control the printer. Arduino is our first choice because of its versatile applicability with simplicity.

1. **How to Solve the Problems: Concrete Mix-Design & Design of Structure**

These are the simplest of all the constraints. Preparing of concrete mix-design will involve some trial and error process to finalize; which time-consuming but quite simple procedure. And finally the design of the structure is quite straight forward; nothing much to say.

So, let’s print some Houses to move in.

**Sources**:

1. https://gulfnews.com/uae/government/worlds-first-3d-printed-building-in-dubai-1.1833450

2. https://www.archdaily.com/591331/chinese-company-creates-the-world-s-tallest-3d-printed-building