PLAS-BRICK: BUILDING SUSTAINABLE, MOVABLE INFRASTRUCTURE

EXECUTIVE SUMMARY

Nigeria, a developing nation holds an important position in the world of innovation and is indirectly burdened with leading the African continent in innovative ways of handling environmental and societal issues. With plastic pollution reaching our groundwater, food, atmosphere and animals driving changes in composition of the environment and affecting day-to-day lives of societies and economies across the world. Plas-brick is intentional in recycling the often left-out plastics as current recycling campaigns are focused on plastic bottles especially those in good shape. To Plas-brick every piece of plastic is a resource, and that resource will be used to solve a problem which can be seen and felt by the people in a short period of time. If financed and adequately implemented, we as a nation will pioneer the fastest recycling campaign the world has ever seen while solving to perfection our emergency housing needs in healthcare, IDP interventions on accommodation, quarantine facility options, research projects outside civilized areas and even interventions within and around communities where erecting a structure within a short period seems impossible. Plas-brick will create a wide range of employment opportunities for different professionals across board and ensure that our academia not only champions plastic recycling research and action but lead the charts on the global stage. I hereby humbly present PLAS-BRICK.

WHY PLAS-BRICK

Plastic pollution in Nigeria is not an issue that lacks fame resulting from the large usage of plastic for different things such as packaging and storage, plumbing. Every city and town in Nigeria has points and places where plastic pollution has claimed farmlands, developable lands and water bodies. No matter the uses, the bottom line is that almost all plastics used end up in the environment where it constitutes a strong pollutant to the environment. In the present of this big menace of plastic pollution, a few people have seen wealth and opportunities in it with some venturing into recycling. However, the level of recycling done in Nigeria have not been able to cover all plastic ranges especially leaving out nylon (polyethylene). Plas-brick as a preference is first of its kind to consider nylon as a huge recycle possibility with a much-needed application in housing deficiency during interventions for Internally Displaced Persons (IDPs).

ENGINEERING AND DESIGN

Plastics are a wide range synthetic or semi-synthetic materials that use polymers as main ingredient and could be moulded into different shapes and forms and applied for different uses. The engineering and design of Plas-brick follows the aggregation of plastic materials from different sources such as landfills, water bodies, and dump sites which will be washed, compressed and weighed then crushed. The crushed plastic is then through adequate engineering mixed with cement within conditions of temperature and pressure and other engineering conditions then poured into designed moulds already designed with joining parts which allows for assembling after production. The engineering and design phase of plas-brick cuts across many professionals which includes but not limited to Structural Engineers, Civil Engineers, Chemical Engineers, Architects, Material Engineers, Builders who would all be actively involved in the project. The roof design of these structures will ultimately consider renewable power supply especially solar power as most of the areas this product will be used may not have power supply to power the needs of the households, individuals and medical storage equipments.

MULTIPLE APPLICATIONS OF PLAS-BRICK

Plas-brick can be converted into many much-needed infrastructures, especially during interventions where housing, storage and transportable options are necessary. Of the possible applications, are quick housing for IDPs, quick healthcare facility including storage for health interventions, quarantine facilities especially in outbreaks of diseases, affordable accommodation for campers, research teams and field work personnel. The beauty is that this product can be assembled by anyone using the manual and can be transported after assembling to any area as it can be dragged by a vehicle or boat.

ASSEMBLING AND TRANSPORTATION

The assembling possibility of Plas-brick is a huge distinction it has from erecting generic structures in such high times of need. The parts will be designed with simplicity such that just it looks like playing a game just by following the manual. The assembled structure can be dragged by a vehicle or boat to desired destination just in case there is the possibility of having issues assembling in the field. The product also takes note of other household needs like restrooms and incorporates that even creating room for special considerations for certain groups of individuals.

SUSTAINABILITY OF PLAS-BRICK

The sustainability of Plas-brick is one which recognizes the need for relieving our environment of the much plastic waste it is holding in water bodies, landfills and dump sites. Plas-brick views this huge tons of plastic as a huge resource and till the environment is free from plastic pollution. Also, the idea of Plas-brick seeks to solve the problems of society which in most cases take governments and other stakeholders by surprise, sometimes creating even more issues than the issue behind the emergency situation. Today, if there is an outbreak of any disease and the few identified carriers need to be quarantined, we do not have a movable option to handle it even at such small scale. Interestingly, with plas-brick this issue will be a thing of the past and will see Nigeria leading the world in climate action, fight against plastic pollution and quick response to emergency situations.

I must however, state that serious research across disciplines will be required to ensure that this wonderful idea even transcends basic usefulness to tackling future concerns for affordable housing for Nigerians.