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▶ **INTELLECTUAL PROPERTY:**  
 PATENT FILED (PI 2019000720)

# BIO-CRETE: The Light Weight Slag Fly Ash Biomass Composite for Building Structure



## Introduction

- BIO-CRETE is a light weight, low carbon foot print and cost-effective bio-composite structural material for rapid building construction

## Problem Statement

- Housing supply and demand data compiled by National Property Information Centre and Department of Statistic for the period 2005-2015 shows a diverging trend between housing demand and supply in Malaysia with a consistent shortage of supply of houses in the order of 2.0-2.5 million per year.
- Currently, the average house price to income ratio is 4.4 which makes the houses seriously unaffordable by international standards of housing affordability classification.
- The fast depleting source of sand and rock which are non-renewable natural sources drives prices of construction materials upward which worsen the situation further.



## Inventiveness and Novelty

- Light weight structural element design which combines plant based material as aggregate and the slag and fly ash sources.

## Intellectual Property Status

- Patent filed. Structural Cementless Coal and Biomass Composite. PI 2019000720.

## Usefulness and Application

- Suitable as structural wall, non-structural wall and door or window frame.

## Status of Invention

- Full sized prototype house system available.

## Commercial Potential

- The housing shortage offers huge market potential for commercialization of rapid construction technology.



## Potential Partners

- Macro Dimension Concrete Sdn Bhd
- Ascension Technology Sdn Bhd
- Lembaga Kenaf dan Getah Negara
- Affordable Abodes Sdn Bhd

## Knowledge Management ( Grant/Publication/etc)

- Development funded by Prototype Research Grant Scheme (PRGS) Ministry of Education.

## Impact of the Product

- Affordable homes for the B40
- Carbon footprint reduction of wall materials by up to 70%
- Reduction in self-weight of wall by 75%.
- Improved thermal insulation property by 45% as compared to conventional brick or concrete walls.
- 57% reduction in construction time of building walls.
- Use of plant based renewable raw materials



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