



Green Bricks of Recycled Plastic:

Analysis of their
Production Process
and Efficiency in
Non-Load Bearing
Structures.

ENGLISH II

PAPER PRESENTATION (2021)

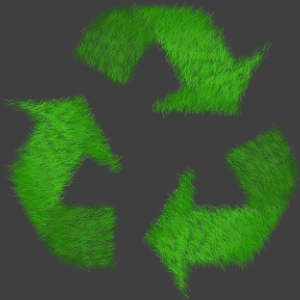
UTN – FRP

Paraná, Entre Ríos, Argentina.

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- ❖ Correa, Pablo Joaquín
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Material Footprint



Recycling



Infrastructure & Construction



New and sustainable
construction system



Map of the presentation

Production Process

- Recycling
- The Green Brick

Efficiency Analysis

- Advantages
- Disadvantages

Implementation

- Construction
System


Production Process

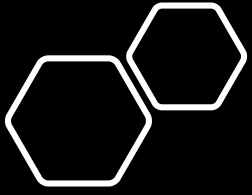
- Recycling



Production Process

- The Green Brick

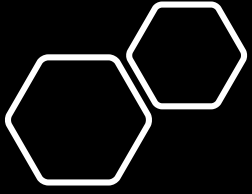
 1 PET	 2 HDPE	 3 PVC	 4 LDPE	 5 PP	 6 PS	 7 OTHER
Polyethylene Terephthalate	High Density Polyethylene	Polyvinyl Chloride	Low Density Polyethylene	Polypropylene	Polystyrene	Other
						



Manufacturing

- Recollecting

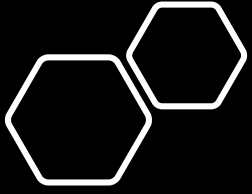




Manufacturing

- Batching

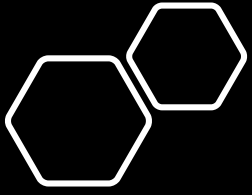




Manufacturing

- Burning of plastic waste





Manufacturing

- Molding
- Curing



GREEN BRICK EFFICIENCY

- Reduction of material footprint
- Resistance
- Low weight
- Insulation and Economy
- Maintenance and finishing
- Economic Accessibility

ADVANTAGES



GREEN BRICK EFFICIENCY

- Structural limitation
- Production
- Unfavorable weather conditions
- Extra costs

DISADVANTAGE



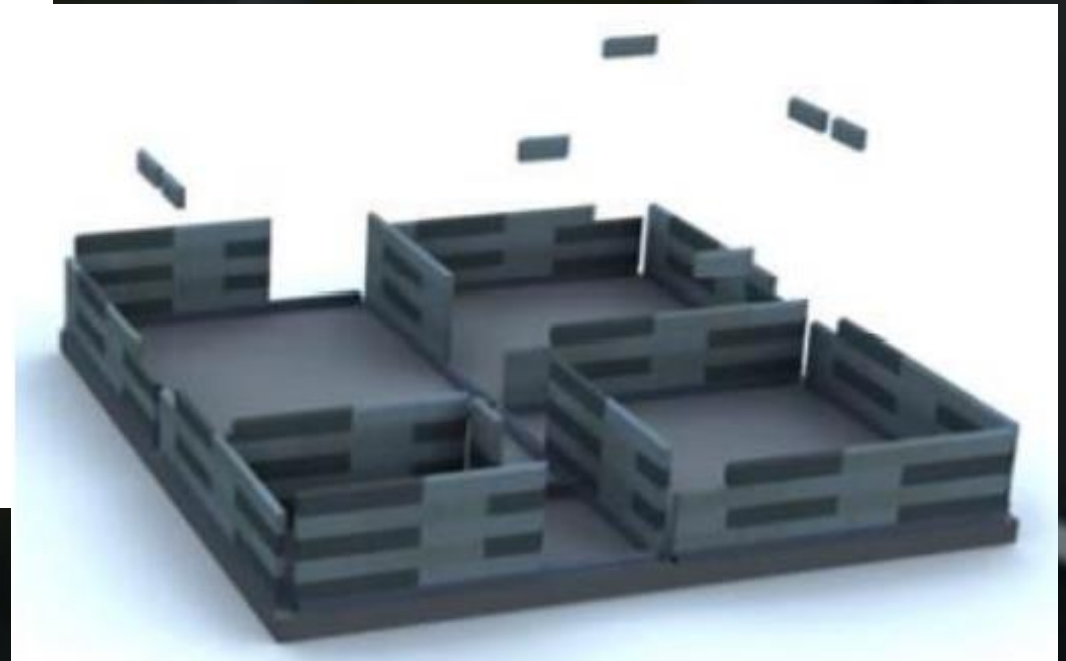
A dark, atmospheric photograph of a construction site at dusk or dawn. The scene shows the skeletal steel framework of a building under construction. Several workers are visible: one is perched on a high beam on the left, another is further up the structure in the center, and a third is standing on a lower level. The sky is a deep, dark blue, and the overall lighting is low, creating a moody and industrial atmosphere. The text is overlaid on the left side of the image.

IMPLEMENTATION

- Construction System
- Construction Process

Construction Process:

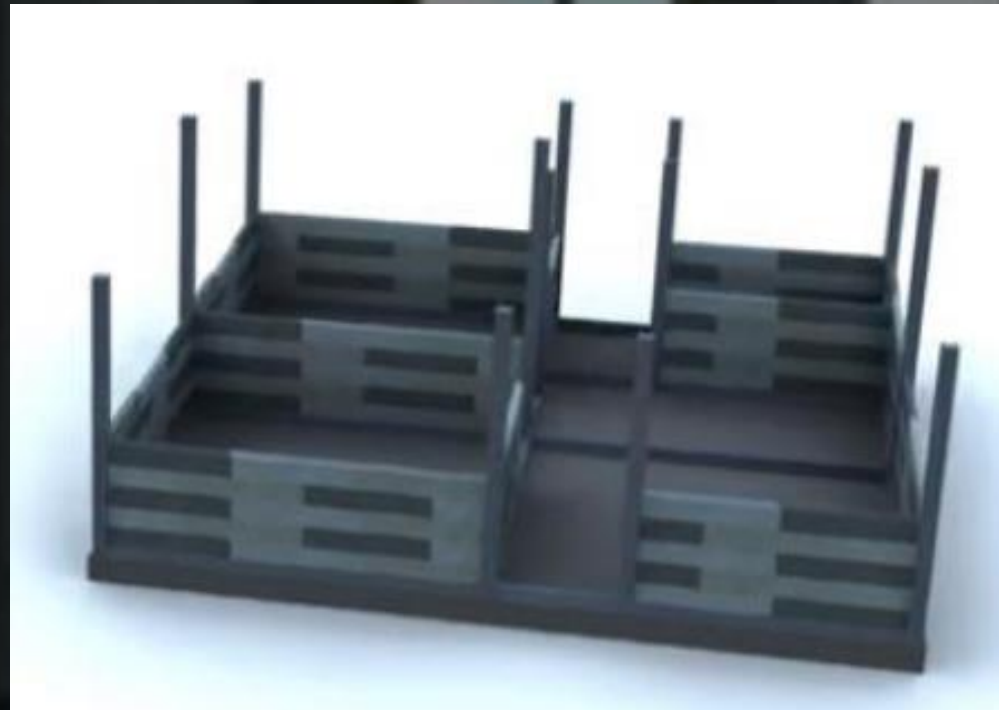
Stage 1:
Foundation and wall survey



Construction Process:

Stage 2:

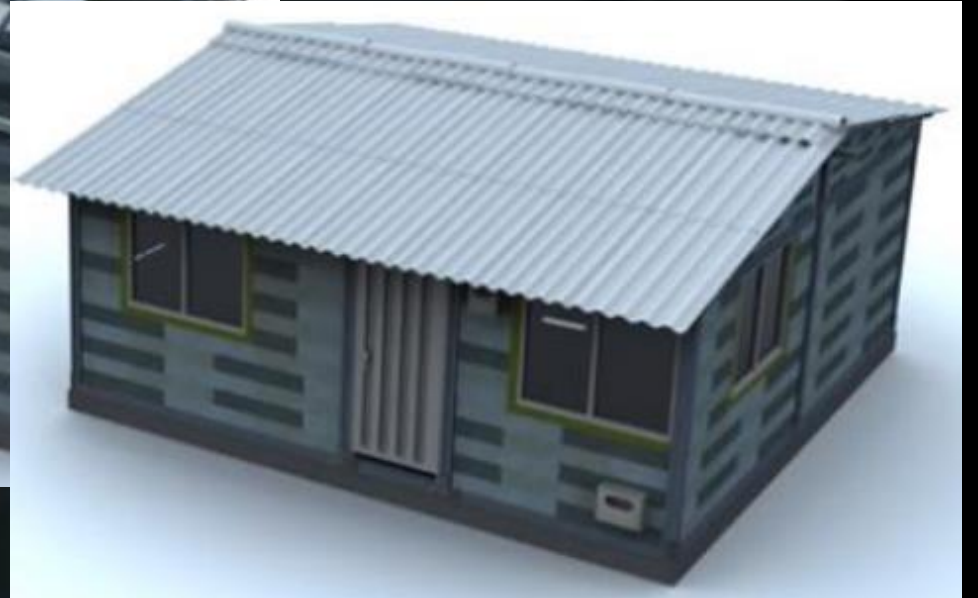
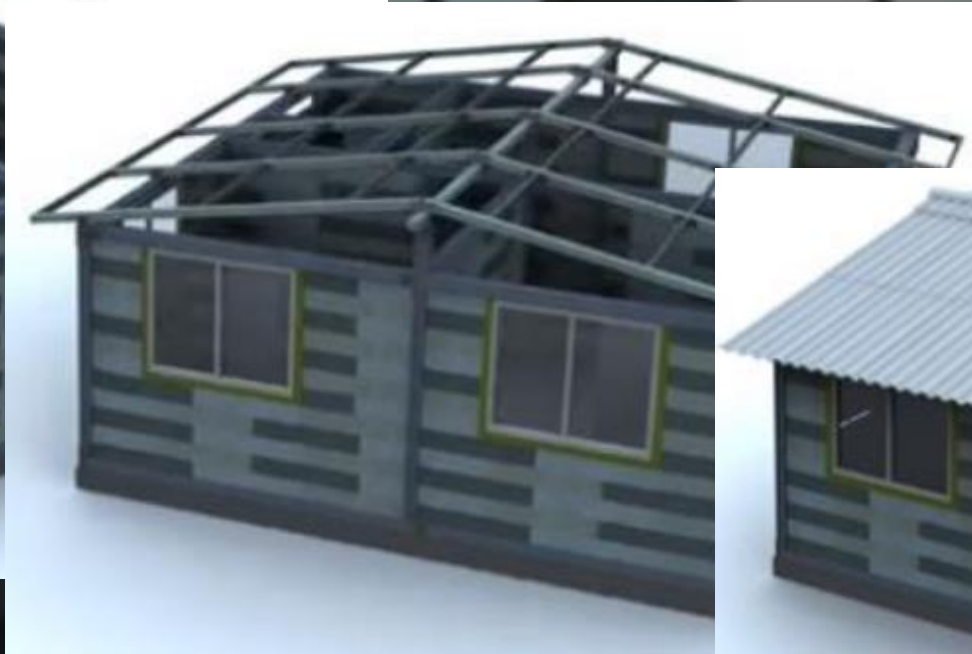
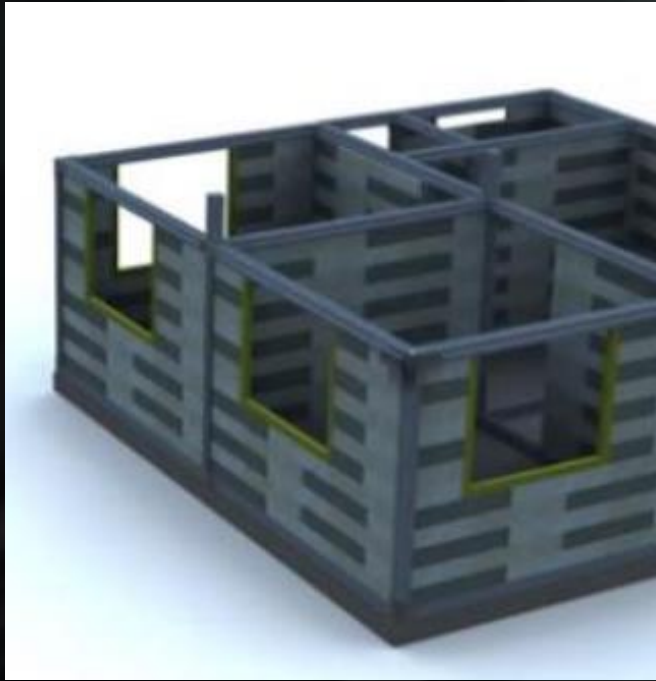
Column's installation and lifting of walls



Construction Process:

Stage 3:

Non-load bearing structures installation and the roof



Conclusion



References:

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- [3] J. C. Gonzalez, «DW,» 21 September 2018. [En línea]. Available: <https://www.dw.com/en/global-waste-to-pile-up-by-70-percent-in-2050/a-45588580>. [Último acceso: 8 August 2021].
- [4] B. N. Obiadi, « The Positive Impact of Plastic Recycling in the Built,» *International Journal of Trend in Scientific Research and Development (IJTSRD)*, vol. 4, p. 9, 2020.
- [5] D. C. C. Moncayo, Artist, Análisis de la implementación de ladrillos fabricados a partir de plástico reciclado como material de construcción. [Art]. Universidad Santo Tomás - Facultad de Ingeniería Civil - Bogotá, 2018.
- [6] S. M. a. D. S. R. Rajarapu Bhushaiah, «Study of Plastic Bricks Made From Waste Plastic,» *International Research Journal of Engineering and Technology (IRJET)*, vol. 06, nº 04, p. 1122 to 1127, 2019.



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Thank you for watching

UTN-FRP Students

