FACULTY OF ENGINEERING

DEPARTMENT OF MINING AND WATER RESOURCES ENGINEERING

A FINAL YEAR PROJECT IMPLEMENTATION

ASSESSING THE EFFECT OF SHREDDED STRAW GRASS FIBER ON REINFORCED CLAY BRICKS

CASE OF STUDY: Morulinga parish, Matany sub county, Napak District.

By

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ABSTRACT

This research was based on assessing the effect of using shredded straw grass as an additive to clay soil for the manufacture of bricks to facilitate low cost housing. The research was conducted taking a case study of Matany sub-county, Napak district - Uganda.

Burning of bricks has led to increased cutting down of trees which has greatly not only degraded the environment, but also resulted into health related complications such as respiratory diseases like tuberculosis. In addition, some trees, animals and bird species have been completely lost. This is true because trees act as habitants for wild animals and birds. Loss of biodiversity and soil fertility has been reported around brick burning sites which greatly impacts the lives of residents negatively. Brick making sites are notorious smoke emitting sources which greatly pollutes air.

Basing on the negative effects of burning bricks, however, it results into stronger construction bricks, this research assessed the effect of reinforcing clay bricks with shredded straw grass on the strength of unburned clay bricks for use in low cost housing construction. The test of bricks was made from a mixture of straw grass (shredded) and well-prepared clay, in proportions of 1:2, 1:3 and 1:4.

The reinforced bricks were subjected to different tests mainly compressive strength and water absorption tests to establish their strength upon reinforcement with straw grass. The test results yielded compressive strength and water absorption values that are above the minimum recommended values as per the BS EN1052-1 and BS EN771-1 respectively. The test results showed that shredded straw grass and clay soil mixed in the ratio of 1:2 yields the best results.

DECLARATION

I LOKUBAL FRANCIS do here by declare that this report was written by me and it's my own work. It has not been presented to any other institution of learning for an academic award.

Signature	Date
……..	…….

APPROVAL

Am presenting this report to the department of Mining and Water resources engineering with the approval of my supervisor.

Mr. TIGALANA DAN

Signature ……

Date…….

DEDICATION

Special thanks to Mr. Joshua FB Agan and Ms. Lilly R Achilla for the financial, moral and spiritual support and timeless effort given to me in my education journey.

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May God Almighty Bless You.

LIST OF ACRONYMS

S R B	Soil Reinforced Bricks
UNBS	Uganda National Bureau of Standards
AASHTO	Association of American State Highway and Transport officials
MDD	Maximum Dry Density.
BS	British Standard
CS	Compressive Strength
PL	Plastic Limit
LL	Liquid Limit
i.e.	that is to say
e.g.	For example
Reg.	Registration
PI	plasticity index
S	Straw fibre
Sp	percentage of shrinkage
TWA	Total Water Absorption
Vb	Volume of the specimen
P.I	Plasticity Limit
Vm	Volume of the mould

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