Comparative Construction Cost Analysis, Uganda

Commentary

Gardiner & Theobald LLP were approached by HYT in early 2014 with a request to prepare updated cost comparisons for various types of structure using various forms of construction.

The structure types to be considered were

1. Classroom Block comprising four classrooms with an office, a store and a veranda.
2. Teachers Accommodation Block comprising three bedrooms with associated sitting rooms and a veranda.
3. Rainwater Storage Tank of 10,000 litre capacity.

The forms of construction to be compared for structure types 1 and 2 were

1. Interlocking Stabilised Soil Blocks (ISSB), manual pressed.
2. Interlocking Stabilised Soil Blocks (ISSB), pressed using a Hydroform press.
3. Fired clay bricks.

and for structure type 3

1. Interlocking Stabilised Soil Blocks (ISSB), manual pressed.
2. Ferrocement.
3. Plastic tank with a fired clay brick protective skin.

To enable a cost comparison to be undertaken Bills of Approximate Quantities were prepared for each structure type based upon architects drawings of actual projects undertaken in Uganda or in the case of the Ferrocement water tank with reference to a research paper prepared by Loughborough University. The Bills were then priced using actual costs of materials, labour, supervision and overheads obtained from detailed cost analyses undertaken by HYT in Uganda supplemented by material cost information obtained from local suppliers in Uganda.

The comparisons were priced in Ugandan Shillings and converted to US $ using an exchange rate of 2,600 UGX to the dollar. Costs were also expressed as a rate per m^2 of gross internal area where applicable.

In conclusion, the results of the comparison are set out in the table attached and indicate that the use of ISSB construction in lieu of fired brick would result in a 23% cost saving for the Classroom Block and a 30% cost saving for the Teachers Accommodation. The comparison for the various types of Water Tank show that ISSB construction is approximately 16% less than Ferrocement construction.

The comparison suggests that the use of ISSB in construction in Uganda can lead to a significant reduction in costs when compared with other forms of construction.