

STARTING A BLOCKYARD COULD BOOST HOUSING AND EMPLOYMENT

With South Africa experiencing a critical shortage in housing and Covid-19 having boosted unemployment, the manufacture of concrete bricks and blocks could help provide affordable building materials and assist in starting small businesses, says Matthews Magwaza, lecturer at Cement & Concrete SA's School of Concrete Technology.

Among the School's online courses this year is SCT13, "Making concrete bricks and blocks," a half-day course providing a rudimentary understanding of how to manufacture masonry units that could become the cornerstone of a new business. Magwaza says the small-scale production of concrete bricks and blocks for masonry is ideal for small businesses. "Manufacturing can be produced outdoors, the process is simple, and the equipment required not exorbitantly expensive. But before starting any brick and block manufacturing operation, it is essential to investigate the economic feasibility of the venture."

But he says it should first be determined what the demand is for concrete blocks and bricks in the proposed area of operations and competition from other block yards. Only once that has been established should costs of production and output enter the equation.

The following factors should be taken into consideration:

- The purchase price or rental of the site;
- The cost of site improvements, such as fencing, paved areas for production and stockpiles, pathways, roadways, and buildings;
- The cost of equipment such as a concrete mixer, block making machine, and various other equipment such as tools, wheelbarrows, and trolleys;
- Water and electricity tariffs;
- The material costs. "As a rough guide, assume one cubic metre of loose aggregate will yield 0.7 cubic metres of concrete volume," Magwaza explains;
- The projected output in terms of number of blocks required, as well as the dimensions, and whether the blocks would be solid or hollow;
- Wastage volumes;
- Maintenance costs of the equipment and site;
- Labour costs; and
- The cost of obtaining start-up finance.

Magwaza says in selecting a site, the block yard operator should consider the distance to the suppliers of raw materials, the market for the blocks and bricks, where the labour force to be hired lives, the quality of security in the area, and availability of services such as roads, water, sewerage, and electricity.

"The ground should be relatively level as steep slopes make handling and production difficult. The site should also be big enough for stockpiling aggregates as well as cement, production equipment, block stacking, staff facilities, a small office and on-site access. Concrete slabs should be provided for the storage of cement (ideally in a weatherproof room, covered with tarpaulins and raised from a possibly damp floor), as well as aggregate stockpiles which tend to be unusable after being in prolonged contact with the soil. Aggregate stockpiles should be on a slight slope so that rainwater does not collect in the aggregates."

He adds that the size of the production area depends on the method of producing blocks or bricks. 'A stationary machine, which forms blocks on pallets, needs a relatively small area with space around it for the operators.



**Matthews Magwaza,
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