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SKILLS DEVELOPMENT

Building Experience

Brick-making business model to teach business science

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The Vaal University of Technology plans to use a brick-making machine as a model business to help teach students from different disciplines about the various facets of running a company before they enter the workplace, says construction equipment manufacturer PMSA MD **Walter Ebeling**.

The company is supporting the initiative through the partial donation of an RE600 brick-making machine, capable of making about 25 000 bricks a day. The full plant will be worth about R850 000 once installed in the first quarter of next year. It will be used to teach civil engineering students about concrete technology, financial students about debt and productivity and business students about management and efficiency, besides other disciplines, he explains.

The model business will not be a mock business, but will be run for profit and must finance the materials, labour and other operational costs and will have to repay costs from the sale of the construction materials.

"There is a need for construction materials throughout South and Southern Africa, so there is a market, but this business will have to compete directly with established businesses. The university will buy some of the materials for its own needs but, to run as a sustainable business, it will also need to sell products on the open market to meet the machine's full production payload," he says.

Further, the model will provide a test-bed for engineering students to experiment with different aggregates, cement content, moisture content and curing regimes and their effects on costs and productivity. This will also help to demonstrate to the business students the effects of changes on the cost of production and will demonstrate to the management students the effect of disruptions on profitability.

"It is important for a block yard to have reliable equipment. For example, if you have a profit margin of 10% and you operate for 20 days each month, and you lose two days owing to disruptions or breakdowns, you effectively lose your profit for those 20 days. Therefore, reliable equipment is imperative for consistent productivity and profit," explains PMSA sales and marketing manager **Quintin Booysen**.

"This means, for example, that the effects of maintenance become apparent to the financial students and the engineering students understand the importance of continuous efficiency and productivity," adds Ebeling.

WALTER EBELING
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The rationale behind the model business is to increase the chances of start-up businesses succeeding, by empowering entrepreneurs and new employees to understand their obligations and the effects of decisions on a business, the logic of efficiency (which reduces costs and improves productivity) and the critical role other disciplines play in the running of a business.

The lecturers are keen to use the machine to demonstrate aspects of mechanical engineering, electrical engineering, programming, production cycles, debt management, financing and efficiency, besides others, to students and will support the students in managing the business profitably.

PMSA also provides the university with expertise in brick making and its own equipment.

"We helped them with the layout of the project to ensure that the process flows and that the controls function, and to remove any potential bottlenecks," notes PMSA technical manager **Bino Di Santolo**, adding that the RE600 is a robust machine that can be fitted with different moulds to manufacture blocks, paving and erosion protection and retaining wall cement products.

The company provided the RE600 brick-making machine because it represents a medium to large brick-making machine and can be used to demonstrate the skills required for smaller or larger machines, adds Ebeling.

QUINTIN BOOYSEN
Reliable equipment is imperative for consistent productivity and profit

The company has been in discussions with a few government departments who have showed an interest in the initiative. Financing the business remains a key consideration, he says, and believes the cooperation of a private company and a tertiary institution to achieve a national objective of teaching business skills to students is a good model for reducing the direct role of government in business development.

"How do you start a small business, finance it and ensure its success? We think that this will help to answer this question for the students."

He adds that about 20 to 25 direct jobs are created by a brick-making plant such as the RE600 and that further jobs are created both upstream, to supply it with materials, and downstream, to use the products.

"The formal sector cannot readily employ more people because they must contend with performance issues and compete with international markets dealing in record low margins and sometimes even with subsidised markets in other countries.

"To create employment we need to enable people to create businesses. This [brick-making machine] is a good way, with a relatively low capital investment, while the training is invaluable."

PMSA's aim is to bring a new generation of skills into the civil and construction industry, which is lacking in many parts of businesses and maintenance services, he adds.

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