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Design – critical to growth of viable product manufacturing sector in SA

Employing qualified industrial designers can secure tangible economic and social benefits for the company

DESIGN and creativity has proven over and over again to boost manufacturing performance, in turn creating more demand for innovative thinking and the application of design in industry.

Northern European countries and the UK manufacturing and business sectors have put in place initiatives to compete aggressively against economic hard times. They have acknowledged with serious intent that in implementing a controlled professional product design and development strategy and by employing well qualified industrial designers they can secure tangible economic and social benefits, including improved GDP figures and increased employment opportunities.

In South Africa the need for the continued growth of a sustainable product manufacturing sector that will feed a domestic and export market with quality innovative products, is an area of major importance.

Each year two top South African institutions 'produce' our country's next generation of industrial designers – those creative minds that eventually mastermind the quality innovative products that make an extraordinary difference in our lives every day.

We spoke to Mike Wythe and Angus Campbell, each an industrial design fundi, about their views on the current state and future of industrial design in this country. Mike is an industrial designer and lecturer for the Industrial Design Programme at the Tshwane University of Technology (TUT). Angus is a senior lecturer in the Department of Industrial Design, FADA, at the University of Johannesburg (UJ).

There appears to be an increasing interest in industrial design as a career. Competition is tough and only the best students are accepted at TUT & UJ.

Mike: Every effort is being made by the institutions to present industrial design as a career option. The main problem is exposure – matrics from the 'sticks' have had little exposure to this field of study, or have no understanding of where products come from. Those that do apply have a basic understanding of design, but this usually stems from their appreciation for fast, luxury cars – most applicants want to be car designers! However, over the last four years TUT have seen a developing interest in the course we offer, together with an improvement in the quality of applicants, so something positive is happening!

The Joe Paine bird fold feeder (above) **– inspired by paper origami birds, the fold feeder subtly resembles a perched Giant Eagle Owl. Joe Paine is a product and furniture designing products that are inventive but simple, sophisticated without pretension, with a focus on outdoor applications, plants and bird life**

Angus: With the ease of access to information through mass media, potential students and school leavers are becoming more exposed to the realm of industrial design. With organisations such as the SABS Design Institute, Southern Guild, Design Indaba and with Cape Town being awarded World Design Capital 2014, design is also being documented much more thoroughly in the popular press. This exposure is also increased for scholars with the inclusion of design and technology as a possible matric subject. Our department had 200 applications for 35 to 40 places in first year. About half of the 200 do not meet minimum requirements in terms of their marks, but the rest are required to submit a portfolio which allows us to evaluate the range of their skills and their understanding of the profession. Competition is tough and only the best students are accepted.

For many students, the initial attraction of an industrial design degree is automobile design!

Mike: The initial interest in industrial design is usually developed from an interest in cars. Evidence presented in the portfolios submitted by applicants shows that the majority believe cars have been 'designed', while other products (electrical appliances, white goods, cell phones, etc) are 'just made'. This undeveloped understanding of what design is all about is quickly changed and developed during the first year of study with us. Through exposure students realise that there >>

THE DESIGN FACTOR...

>> is far more to design than meets the eye.

Angus: There is a serious love affair with automobiles in South Africa and for many of the students entering our programme, a degree in industrial design is a stepping stone to an international master's qualification in vehicle design. With the rise of Apple, the popular understanding of what industrial design can achieve also attracts creative students towards the discipline, although there are still a lot more parents who would like their children to be engineers, lawyers or doctors!

Industrial design graduates typically become entrepreneurs, or work as part of a design team, product manufacturer, model maker or illustrator.

Mike: Employment is at the forefront of the student's mind. Opportunities within the consultancy sector are few and competition is fierce. The corporate world in SA as yet has not recognised the value-added contribution design can make to their endeavours; the manufacturing SME sector in SA is still in its infancy and therefore the demand for design input is limited. As students progress through the course over three years, they do begin to focus on the idea of becoming entrepreneurs as they see the real possibilities in designing, making and distributing their own products.

Angus: Both our 3rd (NDip) year and 4th (BTech) year students undertake internships during their three years of study. These internships regularly result in our students having jobs waiting for them before they graduate. The great news is that this year the demand for industrial designers in a range of industries has been staggering! Graduates typically enter the following career paths: as a member of a design team at a design consultancy; as a member of an in-house design team at a manufacturing company; as a manufacturer of products; as a model maker or as an illustrator. However, the process of design thinking taught to our students can be applied in a wide range of careers and the breadth of our offering allows for a lot of flexibility for the students in finding a place in the job market.

National industry competitions ensure students are exposed to real-life commercial design needs.

Mike: All students have the opportunity to participate in factory visits which give the students a direct insight into the various manufacturing and production processes that are out there. Injection moulding, sheet metal fabrication, pressing, forming and casting will all be experienced first-hand. Students are encouraged to enter industry related projects and competitions, for instance, the Sasol & ARMSA student product of year competition, the PISA, PETCO and Plastics | SA student design competitions, and Eskom lighting and COBRA tap design projects.

Taking part in these competitions students have to address issues beyond those of mere aesthetics. They have to prepare manufacturing documentation and specifications as well as indicative product costing information. They have to prepare a package of information that will communicate the marketing aspects (aesthetics, function, ergonomics) of their product, as well as all the manufacturing and material specifications details required to move into volume production.

Angus: Our department tries to make sure that all projects undertaken by students are as real as possible, but without the financial implications or risks of manufacture. In the 1st and 2nd year of the programme our training focuses on teaching skills. In 2nd year the students

participate in multiple national industry competitions (such as the ARMSA and PISA student design competitions), and in 3rd (NDip) and 4th (BTech) years students regularly undertake projects for international competitions and local industry briefs. Many of the projects they undertake also require them to outsource certain components of their designs to manufacturers (such as laser cutting) which stands them in good stead should they want to start their own companies directly after graduating.

Design must be taken seriously as an integral part of manufacturing, business development, growth and increased employment.

Mike: I believe there is a growing interest in industrial design within the manufacturing sector. Within small, medium and large company structures there should be a genuine acceptance that 'the design factor' is a strategic business tool that can have a major impact on your company's bottom line.

If we, as a developing country, are to see any improvements in our balance of payments or GDP we must start manufacturing value added products. To give industrial design just a passing glance as a 'nice to have' is not good enough.

Angus: The plastics industry in Johannesburg (Plastics | SA, PISA, ARMSA and Afrimold) has been very good at running annual competitions with our students, exposing the students to the industry and the industry to the creativity of the students. In terms of relevance and quality, for all exit level modules we have industry based moderators that give us feedback on the student work and project briefs. Through our annual student exhibition past alumni and industry are invited to see the range and quality of our student work which also allows for feedback.

There are a number of hurdles for the industrial design graduates who hope to follow an entrepreneurial route. However, starting small, whilst keeping overheads low and gradually building the company has given birth to some great success stories.

Mike: There is no easy access to venture capital to set up their operation. If it is self-funded it is heavily taxed from the start, putting a burden on cash flow. IP costs are high. Cost escalation from ex-factory to distribution to retail is also a factor as percentage profit mark ups are high. Local tooling costs are not competitive and local raw material costs are high. There is also little or no promotional initiative for locally designed and manufactured products. A 'shop window' for South African designed and made products would be a great help – a South African Design Centre!

Angus: Access to finance and the ability to protect your design whilst trying to source finance are two of the greatest challenges for students trying to commercialise their designs. However, many alumni have started very successful commercial enterprises straight out of university. These tend to be students that start small, whilst keeping overheads low and gradually building their company through their success. Examples of such companies are Dokter and Misses, and Joe Paine who both recently returned from exhibiting their design work in London and New York to much praise.

www.tut.ac.za/goto/id

www.uj.ac.za/industrial

The Lala drinks cabinet by Dokter and Misses **– industrial designer Adriaan Hugo and graphic designer Katy Taplin have combined skills to produce a selection of furniture, lighting, objects and design-art pieces known for its strong modernist lines, graphic patterns and the sense of humour that runs throughout**