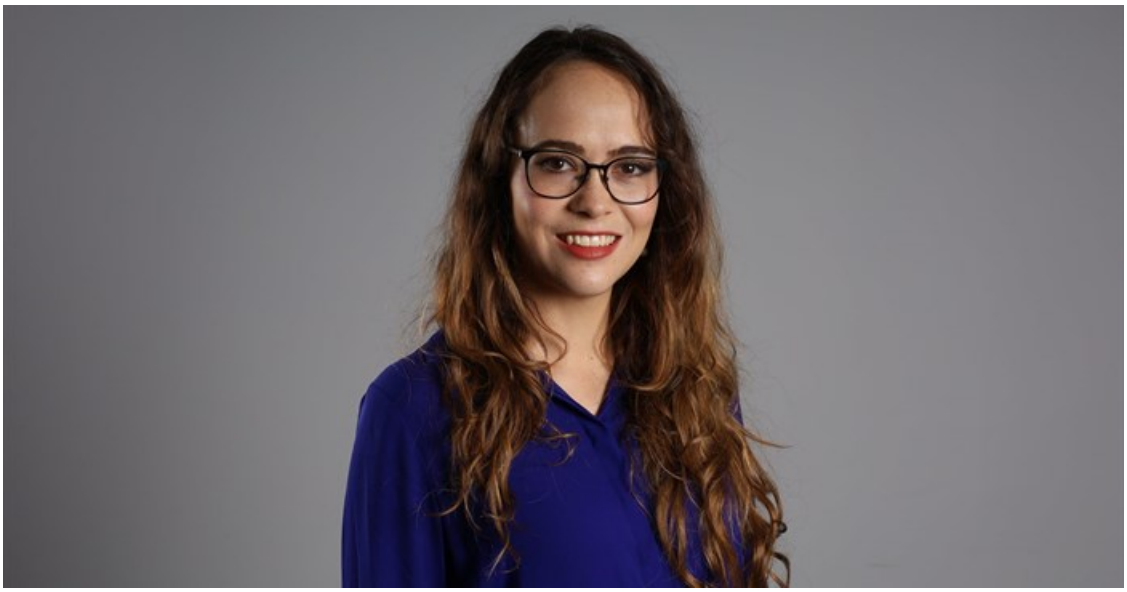
Young engineer says green economy can create jobs

Zuthari technical director Mareli Botha was named Young Engineer of the Year at the 2023 CESA Aon Engineering Excellence Awards. She explains that process engineering is usually the first discipline to start an integrated engineering design in the industrial space.



“It is a lot of fun because it typically allows for freedom to conceptualise new designs,” she adds. It also typically feeds into the business concept throughout the engineering phases, especially during early project phases.

Botha, one of the youngest technical directors in the industry, explains that she decided to study chemical engineering due to its connection to systems thinking. She then did vacation work in the plasma engineering department at the South African Nuclear Energy Corporation (NECSA). Completing a couple of designs for a plasma waste-to-energy project, she says she discovered her passion.

#WomensMonth: How Kholo Letsie survives life at a mine

Lindsey Schutters 31 Aug 2023

“The combination of engineering, creative design, and the concept of making a difference to one of the largest problems internationally, namely the waste crisis and environmental impact, became my inspiration.”

This was followed by an internship under Professor Christophe Laux at the Laboratoire EM2C at CentraleSupélec in Paris. Mareli was then invited to complete an international master's degree in project management, energy and environmental engineering. It opened her eyes to all the other options in environmental engineering and sustainable design.

Job creation

This means that job creation, operating philosophies, and environmental impact are a basic function of all engineering firm designs.

“For green process engineering, it is even more true, since sustainability concepts are embedded into the basis of every design,” highlights Botha.

Within this space, she works on fascinating projects that could fundamentally change South Africa’s green economy, such as green hydrogen, biogas to energy, and waste to value. “These types of projects enable us to create new businesses, with the potential to generate numerous jobs, while improving the country’s sustainability profile.”

There has been a significant increase in women in the process engineering field over the last couple of years, indicating that the industry and people’s mindsets are changing. “I believe a number of other engineering fields are seeing a similar change. Having good female role models in this field is important,” she stresses.

“As consulting engineers, we work in a constantly changing industry. New technologies, new legislation, new risks and priorities for clients drive the types of projects the market needs,” says Botha. This calls for ongoing self-development and adaptability to industry advances. Lifelong learning is a reality in a field that calls for deep expertise and relevant skills.

Great opportunity

“It is both a challenge and a great opportunity. In my case I ensure that I interact with other experts daily to keep learning and adapting. I have never stopped studying and am currently busy with a PhD, which presents a different and fascinating learning experience. Obviously, since the industry is so fast-moving, work-life balance can also become a typical challenge for most engineers. This is something to manage actively,” she says.

Botha is passionate about mentoring and says access to excellent colleagues and mentors in her chosen field has helped her progress.

“Having a mentor is very important and having the right mentor is vital. Young engineers should actively manage their own mentoring opportunities: Find a mentor, secure their buy-in, set up sessions, and follow up. You would not believe how willing people are to spend time to nurture the next generation of engineers,” she concludes.