



# A passion for the community

**IMIESA** speaks to Waseemah Isaacs, principal civil technologist at Knight Piésold Consulting, about her career choice, formative experiences and involvement in past and current projects, as well as the unique elements that women engineers bring to the profession. It's all in the detail.



**A**t Knight Piésold Consulting, one of the founding principles of the firm's success over the past 96 years has been its focus on human resource development across its global workforce. This focus includes promoting diversity in terms of culture, leadership style, ethnicity and the way opportunities are developed for engineers. Academics are a baseline entry requirement, but from there, the playing fields are levelled when it comes to mentoring and growing pure engineering talent.

As Waseemah Isaacs, principal civil technologist at Knight Piésold's Cape Town office, emphasises, it's all about hard work, dedication and passion. "Nothing in life happens by chance, and you must believe in yourself and embrace opportunities," she explains.

"I was drawn to engineering because I know that the infrastructure landscape we create

today is vital for our future. And as a mother and engineer, I fully appreciate the positive and direct socio-economic difference this makes for families and their communities. We were only three women in our civil engineering class at university some 14 years ago. However, when I look at the trend now, I can see that the number of women choosing to study engineering is definitely growing."

From her formative experience, Waseemah says one of the key things to emphasise at school level is a greater appreciation of the foundational importance of mathematics for most careers, but especially for fields such as engineering. "I feel that teachers should place more emphasis on the applied elements of mathematics since this opens one's eyes to real-world examples in the fields of algebra, geometry, trigonometry, calculus and statistics. These are all tools we use as engineers, which we continue to develop over a lifetime of practice," she explains.

As part of its corporate social responsibility programme, Knight Piésold is partnering with various schools in South Africa, and recently hosted its annual Consulting Engineers South Africa Job Shadow Day in May 2017, the focus being to encourage and support potential candidates wishing to enter the engineering profession. A number of Knight Piésold's young engineers have been assigned to identify and grow potential talent as some of these candidates could become future bursary students.

"If I had to consider where women bring something different to the profession, beyond maths and science, and ability, I would say it's our empathy and natural organisational abilities, plus we listen well," says Waseemah. "It may be a coincidence, but one of my key professional interests, alongside my specialisation in roads and infrastructure, is in project and programme management, the latter focusing on longer-term

strategic planning and continuous improvement. I really enjoy seeing a project through from inception to the completion of the construction phases, including documentation and design. Beyond that, we're engineers first, who want to build lasting structures."

Personal career highlights to date include involvement in the design and construction management of the Roggebaai Canal at the V&A Waterfront, which interconnects with the Cape Town International Convention Centre; the Sibaya Casino access road and interchange in Durban; and a three-year stint on Cape Town's Robben Island for the refurbishment of the desalination plant.

### Stock Road and N2 Wild Coast

Waseemah currently forms part of a project team working on key Western and Eastern Cape projects. These include the Stock Road integrated rapid transit (IRT) project in Philippi, Cape Town, and specific portions of the greenfield N2 Wild Coast toll development, now in the initial preparation phases in the Eastern Cape. Both of these projects are prime examples of civil engineering developments that are helping to uplift previously disadvantaged groups.

On the N2 project, Knight Piésold is currently completing an access management plan to determine how

this new single carriageway will affect the rural community living in the region. Historically, they have had limited access to mobile transport: essentially, these are pedestrians and farmers facing a major new transportation landscape.

"We are analysing the potential impacts," says Waseemah. "That includes making provision for elements like cattle overpasses and pedestrian underpasses at regular intervals along the route."

Appointed in May 2017, Knight Piésold's scope entails the design and construction management of the road between the two new landmark bridges that will be built, namely the Msikaba and Mtentu, both of which cross major river gorges. "We will be working with the bridge consultants to ensure that the road programme advances in parallel, ensuring that the project end dates are synchronised."

Construction of the road is expected to commence during 2018. In addition to extensive community liaison, Knight Piésold's tender documentation needs to make provision for smaller work packages. "Wherever possible, job creation initiatives will be created, especially for women, who frequently form the backbone of these communities," says Waseemah.

"There will definitely be job and skills transfer opportunities over the approximately 30-month construction programme. We also hope to contribute in terms of CSI ventures."

### Rapid bus route

Meanwhile, back in Cape Town, construction works are at an advanced

stage on the Stock Road IRT initiative. The project is situated on the Cape Flats in a very impoverished area in Philippi. "This area has experienced major densification following the addition of informal settlements," says Waseemah.

The total route is around 2 km and runs between the R300 and Govan Mbeki Road (previously Lansdowne Road). Once the upgrade is completed, transit times will be greatly improved along what was previously a single-lane section. Currently, due to severe congestion, it can take more than 30 minutes to travel this relatively short distance on any given day.

"We have redesigned the route to accommodate a 30m wide roadway incorporating various elements. These include two lanes in either direction plus three bus stations. We've also added dedicated red-coloured concrete lanes for the buses, as well as non-motorised transport sidewalks to ensure space and safe movement for cyclists and pedestrians. All phases are due for completion by late 2018," Waseemah explains.

### Mentorship

"Gaining experience on projects of this nature really hones your skills as a professional engineer and helps us to pass on the knowledge. I'm registered as a mentor with the Engineering Council of South Africa and play a key role in developing the next generation. Currently, for example, I'm mentoring one of our young women engineers through to professional registration. We share the same passion for roads and stormwater, as well as the much broader possibilities within civil engineering," she adds.

"On a final note to all aspiring engineers, men or women, I'd like to say that you will only achieve your goals if you work hard. Most importantly, ask questions all the time. That's the only way you're going to learn," Waseemah concludes. **35**

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