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UCT MSc engineering graduate establishes – decades later – why walls of granny’s house in Lesotho were cracking

Monica Damane grew up wanting to know why the walls of her grandmother’s house in Quthing, Lesotho were cracking and through hard work and determination she managed to answer this question while earning an MSc in engineering, specialising in geotechnical engineering, obtained through the University of Cape Town’s Faculty of Engineering & the Built Environment.

Geotechnical engineering applies scientific methods and principles to help engineers understand the Earth’s crust and its materials. Importantly, it assists engineers to come up with solutions to pressing challenges.

Born in Lesotho, Damane and her siblings come from humble beginnings. After their parents’ death, the five children were raised by their grandmother at her home in the Quthing District where there were very few extras. “The road has not always been easy – it’s [actually] been very difficult. My siblings and I had to struggle for everything. But today I can safely say that it’s all been worth it.”

She made it her mission to answer the question about her grandmother’s house, and years later realised that she needed an engineering degree to get that right. She enrolled at Jain University in Bangalore, India to complete her undergraduate studies thanks to a scholarship from the Indian government.

She completed her undergraduate studies with flying colours and in 2017 UCT gave her the green light to start her master’s. Her postgraduate studies were made possible by the Mastercard Foundation Scholarship Program in partnership with UCT.

When Monica started her MSc, the pressing question she wanted answers to for years had still not been addressed. No surprise then that she dedicated her thesis to establishing

why cracked walls were so common in houses in Quthing and possibly in other parts of the country and the world too.

“I found my research challenging and interesting at the same time. I had to travel a long distance from Cape Town to Lesotho to investigate the site, collect soil samples and bring them back to campus for analysis,” she said.

In the end, her research found that soil collapse due to hydrocompaction was the reason the walls were predisposed to cracks. This phenomenon affects a range of landscapes around the world and is the result of structural collapse of certain components in the soil. It occurs after the wetting and loading of unsaturated materials.

“I hope my research findings contribute to the knowledge that soil and geotechnical properties are crucial in rehabilitation and designs of durable structures,” she said.

She’s not yet sure what’s in store, but for now Monica is focused on performing well in her job at GWC Consulting Engineers in Lesotho. And while she does have plans to complete her PhD, she said she’s in no hurry just yet. “I am fascinated by research and new findings, so I would love to get to PhD level. But for now, I am focused on the present,” she said.

“I’ll get there.”

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Monica Damane

Credit: Supplied

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