

Faculty Newsletter



Message from the Dean

The end of the fourth semester is upon us with exams about to begin. Thank you to everyone who has worked so hard to catch up the three days we lost in September owing to the tragic death of Uyinene Mrwetyana.

Over the period following her death, we have run five Men Let's Talk sessions and a number of Reflection sessions where we gave students and staff the safe space to talk, to express their thoughts and what they are feeling, or just to listen. There is a lot of fear and concern around safety on campus. A VC Desk on Safety on Campus was sent out on 14 October and highlighted all the changes and the initiatives that have been put in place to enhance security. We will continue to engage with the students and ensure they are getting the support they need. The issues they have

raised in the sessions were sent to Dr Reno Morar, the COO, who is busy addressing most of their concerns.

Congratulations to the staff who received their Ad Hom promotion. I am always pleased to see staff being recognised for their hard work and dedication through teaching, research and social responsiveness. We are waiting to hear the outcomes of the Scientific and Technical Officers Ad Hom promotions.

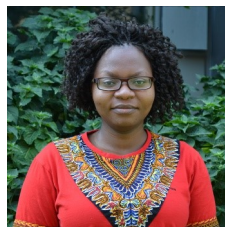
I am inspired by the number of EBE student entrepreneurs we have in the faculty, and proud to see their innovative start-ups. Our staff and students continue to showcase the Faculty by winning awards, and doing amazing work in our communities.

Ad-Hom promotions

Congratulations to the staff who received their Ad Hom promotion

Lecturer to Senior Lecturer

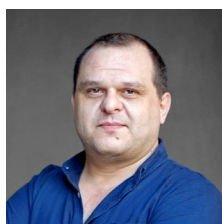
Dr Joyce Mwangama
Electrical Engineering



Research officer to Senior Research officer



Dr Liza Cirolia
African Centre for Cities



Dr Thanos Koptsiopoulos
Chemical Engineering

Senior Research Officer to Associate Professor



Dr Belinda McFadzean
Chemical Engineering



Dr Jane Battersby
African Centre for Cities

Associate Professor to Professor

A/Professor Roger Behrens
Civil Engineering



Professional of the year award

A/Professor Kathy Michell, HOD of Construction, Economics and Management, received the SA Women's Property Network Western Cape Professional of the Year award in the public sector. The SA Women in Property Awards (SAWIPA) is a platform established by the Women's Property Network to recognise and celebrate the achievements of women in various segments of the South African property sector. SAWIPA recognises outstanding leadership, commitment and success in individuals and organisations that have stepped up and shaped women's roles within the private and public spheres of the sector. This includes CEOs, executives and leaders in corporate South Africa, SMMEs, government departments and agencies, as well as entrepreneurs.



College of Fellows Young Researcher Award

Dr Dyllon Randall has been selected as a 2019 recipient for the College of Fellows Young Researcher Award. The award is granted annually to young academics at UCT to support their demonstrated ability to make a significant contribution to their field and is intended for research purposes. The award was presented to Dyllon at the annual Fellows Dinner held on 16 October.

In August,

Dyllon was one of 25 elected Next Einstein Forum Fellows from across Africa. The initiative aims to build the community of African scientists, leaders whose research and innovations will help address Africa's and the world's most urgent challenges. [Read More](#)

The Royal Society has also recently awarded Dyllon the society's prestigious accolade, the Meiring Naude Medal for 2020 for the most promising young scientist in South Africa.



UCT Fellow



Professor Genevieve Langdon has been elected as a UCT Fellow. UCT's Council established fellowships for members of permanent academic staff in recognition of original, distinguished academic work that merits special recognition. Genevieve joins 12 other EBE staff members who have been elected as Fellows.

Genevieve has also been elected as a member of the Academy of Science of South Africa (ASSAf). ASSAf honours and recognises the country's most outstanding and celebrated scholars, with a key objective of the Academy being to promote and apply scientific thinking in the service of society. The criterion for election is "significant achievement in the advancement and application of science/scholarship, both nationally and internationally."

Genevieve is the Head of the Mechanical Engineering Department as well as the Director of the Blast Impact & Survivability Research Unit.

Another successful SEMC conference

The 7th International Conference on Structural Engineering, Mechanics & Computation (SEMC 2019) was held in Cape Town from 1 to 4 September. The founder and conference chair, Professor Alphose Zingoni of the Department of Civil Engineering, said, "The SEMC conference brings together from around the world academics, researchers and practitioners in the broad fields of structural mechanics, associated computation and structural engineering. The aims are to review recent achievements in the advancement of knowledge and understanding in these areas, share the latest developments, and address the challenges that the present and the future pose." The conference has been held every three years since 2001.

Over 400 researchers from 62 countries attended SEMC 2019. As many as 180 universities (including top-ranked MIT, Imperial College London, Cambridge, ETH Zurich and Cornell) were represented. Professor Sue Harrison, DVC for Research & Internationalisation, welcomed participants at the official opening on Monday 2 September. Keynote speakers



Delegates at the opening plenary

included EBE alumnus Professor Klaus-Jürgen Bathe, who gave a lecture titled "Advancing frontiers in finite element procedures" at the welcome reception. Other keynote speakers were Professor Tim Ibell (UK), Professor Brian Uy (Australia) and Professor Ben Young (China).

Of the 411 papers that were scheduled for presentation at the conference, seventeen (17) were contributed by EBE academics and PhD students. Some 18

special sessions were organised within the framework of the conference. These included the session on Explosion Loading, organised and chaired by Professor Genevieve Langdon of the Department of Mechanical Engineering, with contributors from South Africa, the UK, Belgium, the Middle East, India, China and Australia.

The SEMC 2019 Proceedings, edited by Professor Zingoni, have been published by Taylor & Francis and will be indexed in Scopus.

Vac work with a difference

It was vac work with a difference for 19 chemical engineering students, as they gained both experience and an appreciation of critical career opportunities in the public sector, this time in the beleaguered water category.

The students spent their winter vacation in the Snape Building, gathering, sifting and digitally capturing critical water and sanitation infrastructure data for the water-stressed Amathole District Municipality in the Eastern Cape.

This will help the municipality, a Water Services Authority, improve its water and sanitation asset-management practices and service delivery to residents, and comply with national legislation.

They've called the project



#DATA4WASI, short for Data for Water & Sanitation Infrastructure. The project drivers are civil engineering alumnus Lubabalo Luyaba and Wiebke Toussaint, mechanical engineering alumnus and PhD candidate at Delft

University of Technology in the Netherlands, whose technical career experience provided the vision and coordination capacities needed.

[Read more](#)

Robust rules for managing carbon credits

An article published in [Science](#), co-authored by the University of Cape Town's Professor Harald Winkler, explains why "double counting" carbon emissions could undermine the goals of the 2015 Paris Agreement, and how a robust outcome for international carbon markets can be achieved.

In December 2018 the 24th United Nations Climate Change Conference (COP24) in Katowice, Poland, saw more than 190 countries agreeing on almost all the content making up the rulebook that fleshes out the Paris Agreement. Rules for international carbon markets, however, proved a major roadblock to reaching consensus.

The relevant currency of carbon markets is emission reductions. The Paris Agreement requires a "corresponding adjustment" in which every minus corresponds to a plus. The country selling emission reductions makes an addition to its emission level, and the country acquiring the emission

reductions makes a subtraction. If both are of equal size, then the net effect does not increase emissions. It's really just standard double-entry bookkeeping, applied to carbon.

If, however, emissions reductions are counted by both the "selling" and "buying" country, this threatens environmental integrity – adding tons of carbon dioxide equivalent to the atmosphere after the trade. This would violate the Agreement made in Paris to "avoid double counting". Read more [UCT news](#)



Fifth win for UCT sprint sensation

For the fifth consecutive year, Mpumelelo Mhlongo has been named the UCT Sportsperson of the Year. Mpumi is a Chemical Engineering PhD candidate whose story started with a physical disability but has seen him rise to break social stigmas, conquer his challenges and pursue greatness - not just for himself, but for others too!

Mpumi is considered a world-class athlete and holds multiple All-Africa and World records in his para athletic category. He is using this platform to raise awareness for others who are living with disabilities - to encourage, inspire and change attitudes! Please join us in supporting his campaign by following him @mpumi2020_ and sharing his story!

[Read more](#) at UCT News.



President of international society



A/Professor Francois Viruly from the Department of Construction Economics and Management has been appointed as President elect of the International Real Estate Society for 2020, and he will take up the position of president in 2021 for a one-year term. The Society's mission is to encourage communication, co-operations, and co-ordination regarding real estate research and education on a world-wide basis. Encourage and assist in establishment of real estate education and research programs on a world-wide basis. Encourage research on international real estate topics. Encourage and facilitate faculty exchanges

Francois is also presently the Executive Director of the African Real Estate society, a sister society of the International Real Estate society. Other sister societies include the American Real Estate Society, Asian Real Estate Society, European Real Estate Society, Latin American Real Estate Society and the Pacific Rim Real Estate Society.

EBE future leaders

Athenkosi Nzala, a 2017 civil engineering graduate received three awards at the University's annual Student Leadership award event. He received the 2019 UCT Vice Chancellor's student leadership award, the Social Responsiveness and the Entrepreneurship awards.

The VC's citation said, "He is committed to the values of transformation, social justice and serving others. In 2017, noticing his capacity to make a difference, he founded the AfrikaCan! Foundation, a non-profit organisation that provides extra-curricula opportunities and support to high school learners from under-resourced communities across Cape Town. Having served hundreds of students since inception, the Foundation last year received the Western Cape junior Hero Award for its commitment to youth development through mentorship and academic support.



VC with Athenkosi Nzala

Athenkosi is the embodiment of the kind of student leadership and social responsiveness to hope for here at UCT. Indeed, his work with Inspire Foundation Group for Africa, Activate Change Drivers, UCT DSA Leadership

programme, Engineers without borders South Africa, LeadSA, Pearson South Africa, proves their commitment to the redistribution of opportunities and resources in Africa.

Fully aware that transformation starts at the personal level, Athenkosi also employs and mentors two young men through their photography and videography business, further illustrating his dedication to putting others first and leading with integrity. He is dedicated to hard work, leadership and helping others achieve their full potential. Congratulations Athenkosi Nzala."

Thapelo Nthite, a fourth year mechatronics student was 4th in the Entrepreneur Award (see story page 7). Thabang Sebetoane was 3rd in the Leadership Excellence Award for the work he is doing in his mentoring and tutoring non-profit organisation Tshehetso. (see story [here](#))

In memory of a student

On 15 October 2019, the executive committee of the Association of Built Environment Students (ABES), with assistance from UCT's Senior Horticulturist, Noelene Le Cordier, organised the planting of an indigenous tree in memory of Ruddy Bigabwa. Ruddy was a 2017 first-year construction studies student who sadly passed away in October 2017. At his memorial service in 2017, the CEM department promised his family that they would plant a tree in his memory. Due to the severe drought, the planting of the tree was postponed until now. A/Prof Kathy Michell, and fellow staff members and students decorated the young tree with remembrance plaques.



Karen Le Jeune with CEM students



Karen Le Jeune, Mark Massyn, Francois Viruly and Kathy Michell with CEM students

Creative Works Award for *Who we are Macassar*

Last year, Clint Abrahams, a lecturer in the School of Architecture, Planning & Geomatics, together with John Coetzee, the principal technical officer in the school, curated *Who we are Macassar*, a design-build exhibition. The idea for the exhibition was to create an alternative image of Macassar in response to the distorted image that outsiders have of the community. For this work, Clint has been awarded a 2019 UCT Creative Works Award which will be formally presented to him at the EBE Faculty graduation ceremony in December.

The exhibition was showcased in various spaces across Macassar. For this to be sustainable and allow everyone to continue engaging and sharing their stories, a permanent common space was needed.

This year a collaboration between DAAD (German Academic Exchange Service), UCT, CPUT, RWTH Aachen University, Peter Behrens School of Arts in Dusseldorf, and Studio Light, a non-profit youth development organisation, saw the construction of a shared community space.



In July, the students attended a Design-Build winter/summer school on emergent common spaces for building community resilience. The students developed an urban strategy with lots of consultation with the community, and in September, they returned to Macassar to re-build the shack which was part of Thomas and Enith Adonis's home.



Clint Abrahams

The space was opened on Friday 20 September with community members, staff and students attending. Clint Abrahams, the UCT lecturer driving the design-build, said, "Architecture is not just about the classroom. It is about the people." Diana Ferrus, a writer, poet and storyteller, who attended the opening, recited one of her poems. "This project has given hope to the people of Macassar. It has given them pride and integrity," she said.

On Heritage Day, the venue hosted a session on storytelling. Read [UCT News](#)



A winning multilingual banking chatbot

A group of UCT students has won the grand prize of \$25 000 at the African #DataHack4FI Innovation competition which was held in Rwanda on 21 and 22 August.

Thapelo Nthite, a fourth-year mechatronics student, Xolisani Nkwentsha and Sange Maxaku, master's students in Electrical Engineering, and Bonolo Malebo, a postgraduate accounting student, created the banking chatbot #Naledi under their startup Botl Hale AI.

Nthite first pitched #Naledi at the national #DataHack4FI innovation competition finale in Johannesburg where he received the top prize of \$5 000. The competition promotes the use of data and data analytics to solve challenges experienced by individuals or communities. It aims to encourage Pan-African collaboration by creating opportunities for data enthusiasts and emerging tech companies to partner in developing solutions that address local financial and economic inclusion-related challenges.

Last week Nthite represented South Africa at the African #DataHack4FI Innovation competition in Rwanda where he was declared the winner of



The brains behind Naledi (from left) Thapelo Nthite, Bonolo Malebo, Xolisani Nkwentsha, Sange Maxaku.

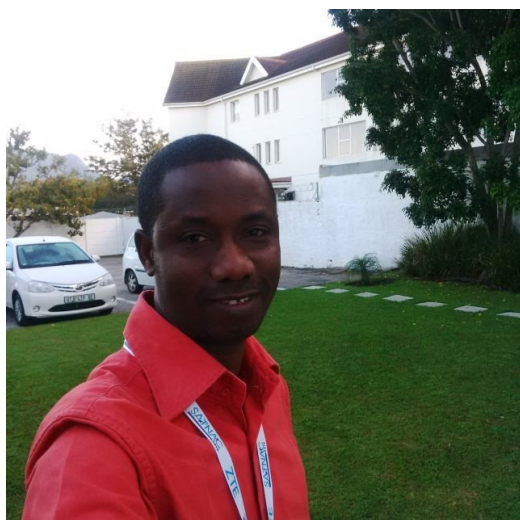
the grand prize of \$25 000. He pitched against other data enthusiasts and emerging tech companies from Ghana, Kenya, Nigeria, Rwanda, Uganda and Zambia. The overall winner was selected based on engagement with data science in solution design, the viability of the business and the potential impact in terms of financial and economic inclusion.

Nthite said, "We are very excited.

We are currently developing a number of systems to improve people's interaction with technology. One of our most exciting projects is 'Naledi', our multilingual chatbot, like Siri but for banking and in South African languages. From the national pitch, some banks were keen to talk to me about the multilingual chatbot."

[UCT News](#)

Best paper award



PhD student Oladele Afolalu received one of the three best paper awards at the 22nd annual Southern Africa Telecommunication Networks and Applications Conference (SATNAC 2019) held at Fairmont Zimbali Resort, KwaZulu-Natal, from 1 to 4 September 2019. The paper, titled "Joint Implementation of Massive MIMO and NOMA Techniques for Improved Capacity in 5G Networks", established a novel scheme to enhance capacity, support massive connectivity and guarantee Quality of Service in 5G networks. Oladele Afolalu co-authored the paper with Neco Ventura from the Centre for Broadband Networks & Applications in the Department of Electrical Engineering.

EBE Entrepreneurs are winners

EBE students shone at the inaugural Entrepreneurship Intersivity's Western Cape regional round, as well as the finals which were held in Gauteng on 18 September.

The Entrepreneurship Development in Higher Education (EDHE) Programme aims to identify the top student entrepreneurs at each public university, to recognise and showcase their businesses, and to prompt investments. UCT hosted the regional event on 22 August which saw 19 teams of student entrepreneurs from UCT, UWC, Stellenbosch University and CPUT compete.

The EBE students won in three out of the four categories. One founding member from each team had two minutes to present their business idea to a panel of six judges, and another two minutes were allocated to questions from the panel.

- **Lungile Macuacua**, second-year chemical engineering student won in the Innovative category for her LabV. Her idea to create a virtual laboratory that can help prepare learners from under-resourced schools for laboratory work at university levels is all about bridging the digital divide.
- **Tamir Shklaz**, a final-year



UCT's top entrepreneurs. They are (from left) Denislav Marinov from DVM Designs, Lungile Macuacua from LabV, Vuako Khosa from Changing Lives Shoe Laundry, Mvelo Hlophe from Zaio and Tamir Shklaz from Quillo. (photo: Brenton Geach)

electrical and computer engineering student, was a joint winner in the Tech Business category for Quillo, a safe, efficient and affordable second-hand textbook marketplace.

In the Social Impact category, Zaio was the winner. It is a gamified online platform that teaches people software development and coding skills. **Harjot Singh and Asif Hassam** are two of the seven co-founders of Zaio. They are both final-year students in electrical and computer engineering. Mvelo

Hlophe, a co-founder from Commerce, presented the business idea.

The regional winners participated in the final leg of the intersivity competition. Two out of the four awards were to EBE businesses.

- Zaio won the Existing Business, Social Impact category, and Mvelo Hlophe was named the Student Entrepreneur for 2019.
- Tamir Shklaz was a runner-up in the category Existing Technological Business. Owing to the high standard of entries, the judges picked two runners-up.

First prize at Writivism Festival



Resoketswe Manenzhe, a PhD student in the Centre for Minerals Research in the Department of Chemical Engineering, won first prize in the short story category at the recent Writivism Festival.

Writivism is an initiative that identifies, mentors and promotes emerging African writers. The festival took place in **Kampala, Uganda, from 15 to 18 August**. According to the website, it is Uganda's leading literary event and celebrates African culture and the

creative arts around an annual theme, which for 2019 was "Unbreakable Bonds".

Resoketswe's winning story, *Maserumo*, is a brief history of several deaths that occurred rather quickly, one after the other, and the possible cause. She walks away with a \$500 cash prize and a chance to work on a manuscript during a one-month residency at Stellenbosch University.

"It was amazing," she said of the Writivism experience. "I met some of the most prolific writers, publishers and activists from all over the continent. And for the first time in my life, I was given VIP treatment simply because I'm a writer."

Taking time out to explore Africa



Suzanne Lambert with beadwork craftswomen.

Three EBE graduates are part of a group of young UCT graduates who have taken a year out to cycle from Cairo to Cape Town under the OurAfrica **PolePole** banner team (**pole pole** means “slowly, slowly” in Swahili). They’re exploring the continent from a developmental perspective, putting their university education to the test, face-to-face, in local communities. During the trip family and friends join them for short excursions.

The three EBE graduates are as follows:

- Robbie Rorich graduated in 2018 with a BSc in Mechanical and Mechatronic Engineering.
- Jess McCormack completed her master’s in Landscape Architecture in 2018.
- Suzanne Lambert is registered for her master’s in civil engineering and is aiming to graduate in December 2019.

They have cycled through Egypt, Sudan, Ethiopia, Uganda, Kenya, Tanzania, and Malawi. You can follow their journey on their [Blog](#)

Helping Africa prepare for 5G



Dr Joyce Mwangama, a lecturer in the Department of Electrical Engineering, is leading the development of South Africa’s first university-based 5G testbed facility: a live network for the development of advanced digital applications.

Joyce, a member of the UCT–Telkom Centre for Broadband Networks and Applications, received funding under the NRF Thuthuka Funding scheme to establish the UCT 5G testbed earlier this

year. With no other known 5G testbed in Africa, the technology that Joyce is working with right now is the first of its kind.

“From smart cities to mobile health, our facility enables us to test 5G services on a live network to help achieve 4IR goals in a structured and organised way,” says Joyce

The work involves the centre’s master’s and PhD researchers testing 5G applications on real hardware and

software incarnations of the network. This is significant because most 5G research in South Africa is heavily theoretical.

“The testbed serves as a bridge where researchers can implement their ideas over a live network and work around issues that they might not have considered in a theoretical framework,” says Joyce.

This not only strengthens research outputs but supports demonstration of prototypes that could drive 4IR products and services.

“If we can prototype these ideas, it gives appetite to the industry so that it’s aware of what’s possible and moves in that direction,” says Mwangama.

It also serves to push government and regulatory bodies to develop a framework around 5G network capabilities and access, which Mwangama says is important. “Cities in Africa have a good potential to leverage 5G use-cases – if they are planned and organised well.”

[Read the full story](#) by Laura Rawden

Annual community build

Karen Le Jeune, the programme convener for Construction Studies, and members from the Association of the Built Environment Students (ABES) organised the first-year construction studies outreach community build. This year they worked on a City of Cape Town housing project in The Hague, Delft, which was facilitated by Blue Moon Projects in partnership with VHP Holdings.

The first years were divided into teams, and for five days they got to experience plumbing, site and planning, laying aprons, painting and finishing, and bricklaying. From laying boundary lines to sanding, painting roofs, walls and doors, mixing mortar, pushing wheelbarrows, to cleaning the building sites – they got to experience what life is like on a construction site. They were supervised by experienced staff from Blue Moon Projects. One group said, "It



was a long week of many experiences of construction, and it is safe to say that a lot was learnt." And another said, "The experience was educational and insightful, and at times gruelling."

The first community build took place in 2005. It brings home to future

construction managers and quantity surveyors the realities faced by people involved in construction, how people benefit from the results of the construction sector and what challenges students will face in industry one day.

ChemEng Visiting Engineer Programme

In September, the Department of Chemical Engineering hosted A/Professor Nicolas von Solms as part of their annual Visiting Engineer Programme. He graduated in 1988 from UCT with a BSc in chemical engineering. He went on to do his MSc Eng at Imperial College, and PhD at Rutgers University, and was a postdoctoral scholar at U.C. Berkeley. He has published more than 110 papers in peer-reviewed journals.

He is an Associate Professor in the Department of Chemical and Biochemical Engineering, Technical University of Denmark, working in the areas of Thermodynamics and Phase Equilibria, Gas Hydrates, Polymer Technology, and Carbon Capture and Storage. His work uses theory and modelling as well as experiments from lab to pilot scale to solve problems using a process-engineering approach.

During his visit, he gave a lunchtime talk to staff and students, titled "A Chemical Engineering Approach to Large-Scale Process Challenges."

Abstract of the talk

Many societal challenges in energy and materials require collaboration across disciplines and national boundaries. Because of the scale of operation of many chemical and energy processes, a process-engineering approach provides



the potential for greatly increased energy and material efficiency. In the talk, he gave examples of process-engineering (and green) solutions in the area of CCUS, refrigeration engineering, polymer technology and energy resources engineering. While several chemical engineering fundamentals were touched on, a more-or-less common thread in the work was the development and application of thermodynamic tools based on theory and experiment.

Welcome to new staff

Dr Paul Amayo joined the Department of Electrical Engineering as a lecturer in July.

Dr Carlo van Niekerk joined the Department of Electrical Engineering as a lecturer from 1 October.

Ms Resoketswe Manenzhe has been employed as a lecturer in the Department of Chemical Engineering. Resoketswe is doing her PhD with the Centre for Minerals Research.

Mrs Debbie Singh is the admin assistant for Professional Communication Studies, as well as for Electrical Engineering.

Mrs Yumna Van der Schyff has joined the Faculty Office from September on a contract as a senior secretary.

Mrs Christine Price joined the School of Architecture, Planning & Geomatics as a lecturer on 1 September to assist the Landscape Architecture programme.

Mrs Khanyisa Tivaringe joins the Faculty Office as the Postgraduate Manager on 21 October. Khanyisa did her honours and master's in materials engineering, and was a member of the 2012 EBE postgraduate student council

Resignations

Bianca Cleenwerck resigned from the Faculty Office and left in September to join her husband in the UK.

Matthew van der Westhuizen resigned and left the Department of Electrical Engineering in August. He is now working at the GSB.

Dee Bradshaw Travel Scholarship

The first Dee Bradshaw and Friends Travel Scholarship was awarded to Nicole Uys, a PhD student from Minerals to Metals. Her trip was to the University of British Columbia in Vancouver, Canada. During her stay she visited two plants in British Columbia and Manitoba.

Throughout her time in academia, Dee Bradshaw was passionate about the development of students and believed in giving them an opportunity to travel and learn. Before retiring from the university because of her ill health, Dee set up the Dee Bradshaw and Friends Travel Scholarship for students who display academic merit and are registered for a postgraduate qualification in the field of the minerals sector at UCT. The scholarship is funded by generous donations from Dee, friends and colleagues.

Congratulations



Christian Polorigni, a civil engineering master's student, and Mwana Mwale, fourth-year civil engineering student, won the gold medal in Latin Pre-Bronze at the 2019 Intervarsity Student Championship competition.

Bonke Mzimeli, a fourth-year mechanical and mechatronics engineering student, won two gold medals, one in ballroom and the other in Latin dancing.

Apprentice returns

Grant Springle was an apprentice in the Mechanical Engineering workshop, and three years ago he passed his trade test and went to work in industry. He has recently returned to join the Mechanical Engineering workshop on a two-year contract. He said he was very happy to be back, and hoped that his stay could be a long one.



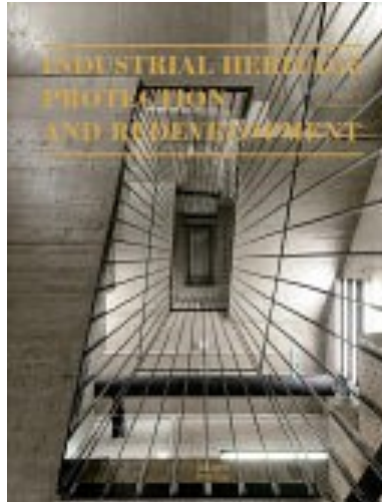
Awards for two books

Michael Louw, senior lecturer in the School of Architecture, Planning and Geomatics, received an award from the Cape Institute for Architects for his book the *Industrial Heritage Protection and Redevelopment*, which was published in July 2018.

Description

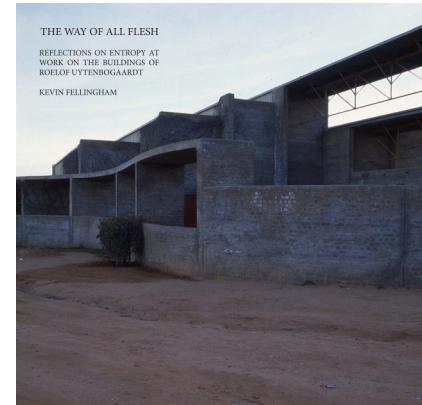
Industrial heritage is an important part of our built environment and landscape. It provides tangible and intangible links to our past and has great potential to play a significant role in the futures of our cities, towns and rural environments. The protection and redevelopment of industrial heritage can contribute to the building of social and cultural capital, environmental sustainability and urban regeneration.

This book showcases a selection of works completed since 2010 with a wide global distribution. It highlights an encouraging increase in the practice of the transformation, redevelopment, and adaptive reuse of industrial structures. From under-utilised, disused, or discarded reminders of times past, the latest metamorphoses



of buildings and structures have imbued them with new purposes in what could be regarded as one more stage in a continuous process of industrial evolution. The four essays written by authors from a variety of backgrounds and locations offer a rich addition to the selection of case studies and could serve as opportunities for further research. This book provides direct, informational reference to architects, researchers, and decision-makers.

It includes projects located in France, Sweden, China, Spain, Chile, the Netherlands, USA, Germany, Portugal, Denmark, South Africa, Italy, Canada, Thailand, Latvia, Belgium, Estonia, and India.



Kevin Fellingham, senior lecturer in the School of Architecture, Planning & Geomatics, received a commendation for his book *The Way of all Flesh: Reflections on entropy at work on the buildings of Roelof Uytenbogaardt*, published in August 2017.

Active Citizenship

On Tuesday 17 September, EBE staff and students had the opportunity to engage with the concept of Active Citizenship with South African anti-apartheid hero Dr Denis Goldberg. The University of Cape Town awarded an honorary doctorate, DScEng (honoris causa), to Dr Goldberg at a graduation ceremony held on Friday, 12 July 2019 in recognition of his courageous and selfless role in the anti-apartheid struggle over decades, which saw him becoming one of the central figures in the liberation of our country.

Dr Goldberg was born in Cape Town in 1933 and graduated with a degree in Civil Engineering from the University of Cape Town in 1955. In 1964 he was sentenced alongside Nelson Mandela and other Rivonia trialists to life imprisonment for his role in the struggle against apartheid.

He is still very active and is passionate about improving the lives of children and youth in local communities. He is a social campaigner and presently is fundraising to build the Denis Goldberg House of Hope, an arts, cultural and educational centre in Hout Bay where young people from across the Cape metropole can bridge the many divides,



engage in cultural activities and skills building, and learn about one another.

The Dean, in her citation for his honorary degree, said, "He has an unfailing passion for life. He has given selflessly for the ideals of justice and equality; he is known for his bravery, intellect and sense of humour, and he is also a man who is filled with compassion and hope."

Pixel exhibition

This year, the UCT School of Architecture hosted their first year's exhibition entitled PIXEL at the AVA Gallery as part of First Thursdays.

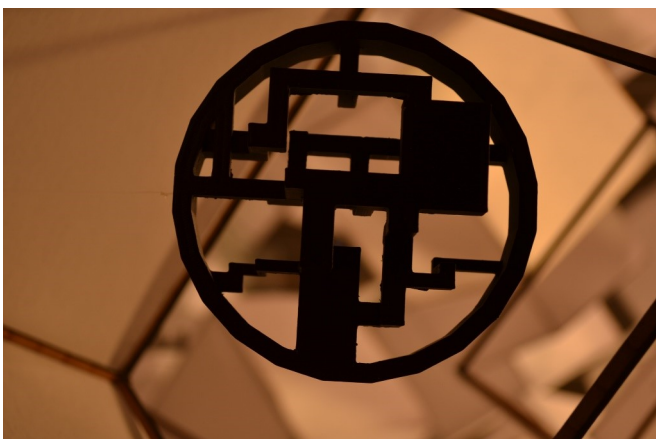
The digital screen is a matrix of dots, each of which can be controlled for a limited range of parameters, how red, how green, how blue, how bright. When added together in very large numbers, these elements can form an endless variety of pictures - they are picture elements, pix-els, pixels.

Imagine a building made of bricks. Now imagine each brick to be a pixel. We could vary the colour, we could vary the texture, we could vary the spacing, or how far from the surface of the wall each brick protrudes or recedes. Imagined this way the wall becomes a surface full of possibilities.

Everything we make a building from can be thought of in the same way, as a part of a larger whole, quite limited in its variations, and constrained too in the ways in which it can be joined to other pieces. If we make the effort to understand these rules, and to understand how much room each offers for play, every wall, every building can find its own freedom to be itself, a little different to the others, adding up to a more interesting world.



Kevin Fellingham, Daniel Xu, Alex Coetzer, DVC Liz Lange and Head of the School of Architecture, Planning & Geomatics, Dr Philippa Tumubweinee



Second place at Solar Decathlon Africa

A solar-powered, “green” house designed and built by staff and students of the University of Cape Town and Stellenbosch University has been awarded second place in the architecture category of the continent’s first Solar Decathlon Africa title in Morocco. The project was initiated by Stellenbosch University’s Sustainability Institute and the entry goes by the name of Team Mahali.

Team Mahali’s fully functional, modular, net-zero-energy house was erected and completed in a solar village of 18 houses in Benguerir, north of Marrakesh. It was just one of the creations of teams from competing universities around the world, all vying for the title of best sustainable house powered solely by the sun.

Team Mahali was the only sub-Saharan team chosen to participate in the competition. The brief was to design an affordable house of between 55 and 110 square metres, using local ingenuity, craftsmanship and materials, and suited to the African context.

Team Mahali’s design used a converted 12-metre, side-opening



container shell for the main living space. Attached timber pods provided additional living room. House Mahali was designed and configured along the lines of a traditional Moroccan riad, which was reflected in its central courtyard and water feature.

“These designs have been used for centuries for their exceptional performance in terms of climate control,

security, privacy, flexibility and adaptability,” said senior lecturer Michael Louw of UCT’s School of Architecture, Planning & Geomatics. Other UCT staff involved in the bid were Kevin Fellingham and John Coetzee, while the project leader was Sharné Bloem from Stellenbosch University.

[Read the full story](#) by Helen Swingler

Visiting lecturer

In August the Geotechnical Engineering Research Group hosted Mike Jefferies, a visiting lecturer for the postgraduate course in Advanced Soil Mechanics. Mike is based in the United Kingdom and has over 40 years’ experience in civil/geotechnical engineering and has published numerous papers in the field. He is most known for the State Parameter approach to soil characterisation – an approach that has become one of the most cited innovations of the past twenty-five years of geotechnical engineering. His book ***Soil Liquefaction: A Critical State Approach*** is used by MSc and PhD students across the world



Postgrad students with, seated left to right, Derrick Zilifi, Dr Laxmee Sobhee-Beetul, Dr Denis Kalumba, Mike Jefferies, Faridah Chebet, and Lita Nolutshungu

Attracting women into engineering

Over 60 high-school girls, ranging from Grade 9 to Grade 12, attended the Women in Engineering event which was organised by the Faculty and the EBE undergraduate and postgraduate student councils on Saturday 17 August. These included 18 Grade 12s who have a conditional offer to study in 2020. Two came from KZN and one from Gauteng, the rest were from Cape Town.

The theme for the day was 'My contribution as an engineer towards the sustainable development goals (SDGs).' They were welcomed by the Dean, who highlighted the need for more women in engineering, and the role engineers play in tackling the global challenges facing us today. Lita Nolutshungu, a lecturer in civil engineering, spoke to them about the future of engineering and why engineers are the driving force behind the fourth industrial revolution.

The girls were divided into groups, and each group had two student mentors to assist them with the SDG engineering challenge they were given. The outcome was a poster and a

three-minute presentation followed by questions. The teams were innovative and creative, and the 20 mentors judged the presentations. First prize went to Life Below Water, second prize to Sustainable Cities and third prize to Affordable and Clean Energy.

A panel discussion followed with four mentors giving their perspective on various topics and answering questions. To end the day, the girls engaged with the mentors over lunch, hearing the reasons why they chose to study engineering and asking for tips on how to succeed at university.

Seven of the 18 Grade 12's attending the event were offered entrance scholarships as they had the points required. In response to the offer, Kam Norton said, "Thank you for hosting me on Saturday. I thoroughly enjoyed experiencing a bit of UCT. I am very grateful to have been awarded this scholarship and UCT is looking like the place for me!" Another Grade 12 said, "It was truly a great experience, and I learned a lot from it."



New Advisory Board for Civil Engineering

On 1 August, the reconstituted Civil Engineering Advisory Board met for the first time. Three civil engineering alumni are members: Erik de Ridder (2012) has been involved in social thesis investing for seven years, Jacqui Gooch (1998) is HOD of the Department of Transport Western Cape, and Abbas Jamie (1988) Founder of the Innovation Mentor. Mrs Bongani Mthombeni-Möller, 2009 MSc Chemical Engineering graduate and Strategic Business Development Executive at SMEC, is the interim chair of the board. The other members are Hubert Van Zondvoort, Associate Director at Royal Haskoning DHV, Trueman Goba, Chairman Hatch Africa, and Gamelihle Sibanda, Chief Technical Officer at United Nations (IOL). The advisory board will assist the department by giving them strategic direction with their planning, 4IR, marketing and fundraising initiatives.



*Left to right back row: Erik de Ridder, Trueman Goba, Prof Pilate Moyo, Gamelihle Sibanda, Dr Denis Kalumba, Professor Roger Behrens
Front row: Professor Mark Zuidgeest; Mrs Bongani Mthombeni-Möller, Mrs Jacqui Gooch, Mrs Ayesha Dalwai, and Professor Hans Beushausen
Missing are Hubert Van Zandvoort and Abbas Jamie.*

Heritage celebration

The EBE Transformation Committee and the EBE undergraduate and postgraduate student councils organised a Heritage Day celebration event. Talented EBE students showed off their fashion designs, they sang and danced, and Resoketswe Manenzhe, PhD candidate in Chemical Engineering gave an inspiring talk on culture and how traditional culture is affected in today's society. The evening ended with delicious food from various cultures.

