

Faculty Newsletter



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Message from the Dean

This semester is characterised by various key activities, including the Adhom promotions for academic, scientific and technical staff, the budget review and submission for 2014, the Personnel Performance System, and the end-of-year graduation. Let us all work together to make a success of the tasks facing us over the months ahead!

Another successful safety week programme (15 to 19 July) was held thanks to the dedication of the departmental safety officers. It is critical that we continue with the message of ZERO HARM and I appreciate the support from the departments.

The Future Foreshore project is progressing well. The project has been

submitted for possible inclusion in the official programme for World Design Capital Cape Town 2014. Although we will only hear in October on the formal registration, there is already a high level of excitement, in and outside of the university, around this multi-disciplinary project.

In July, representatives from the faculty were invited to participate in the Premier's 'SMART Innovation Tour' which showcased innovations and innovators to leading businessmen and government officials. Cape Town Accelerate (a collection of Cape Town business leaders) has invited us to exhibit our innovative research and developments at their annual AGM in August.

As part of our ongoing focus on connecting with our alumni, in August the Faculty hosted a Gauteng alumni event with an executive member of Eskom as the guest speaker, whose topic was on Energy Sustainability in South Africa.

Recently, I was invited to participate in a high-level ministerial summit on the effective role of science, technology and innovation in the realisation of the goals of the National Development Plan. Not only could I cite some of the excellent work conducted in the faculty in relation to minerals, urbanisation, water and energy, but I could also see areas where EBE can contribute more.

Future Foreshore Project

The first phase of the Future Foreshore project has ended and the work of the Planning, Landscape Architecture, Architecture, Chemical Engineering's Sustainable Urban Systems and Property studies students will be discussed, and shared with the Civil, Electrical and Construction studies students who are part of the second phase of the project.

On Wednesday 24 July the final-year design students from civil engineering arranged a social event which provided an opportunity for the civil engineering students to interact with the electrical engineering students around the Future Foreshore project. The work from the first phase was available for them to see what ideas the students from that phase had developed. The students were able to talk to one another across disciplines and start formulating ideas for their final-year design projects.

The electrical engineering students will look at ideas around creating a Smart City – looking at sustainable development projects in alternative energy, and the role of ICT and Communications. Professor Ali Baghai Wadji is the course convener and is very excited that the City has entrusted the students to come up with possible ideas for a live project.

The civil engineering students will look at the demand for

efficient urban infrastructures and sustainable development projects in public transport and water supply. Professor Mark van Ryneveld is the course convener for the civil students.

Students' comments:

"It is very exciting that we get to test what we have learnt and how we can apply it to a real project."

"I am excited that we are able to bring a creative element to the project. That we are able to think creatively and develop real ideas for real problems."

"I feel honoured that the older generation wants the new generation to come up with new innovative ideas to solve real problems."

The work generated by UCT students will culminate in public exhibitions during next year's *World Design Capital* celebrations.



Prestigious NSTF-BHP Billiton Award for ARTIST project

Congratulations to A/Professor Mqhele Dlodlo and Emeritus Professor Gerhard de Jager, who were part of a consortium which received a NSTF-BHP Billiton award for Outstanding Contribution to Science, Engineering, Technology and Innovation through Research leading to Innovation. The award was for the development of the Adaptive Real-Time Internet Streaming Technology (ARTIST).

The awards honour outstanding contributions to science, engineering, technology and innovation in the South African research and development community. Winners in the 12 categories were announced at a gala dinner in Gauteng on 27 June, given by the Minister in the Presidency, Trevor Manuel, on behalf of the Minister of Science and Technology, Derek Hanekom.

The consortium, East Coast Access, the CSIR and the Department of

Electrical Engineering at UCT partnered in 2007 to research, develop and release the ARTIST project, which addresses the widespread problem of low bandwidth and the ability to stream live video in developing regions with no interruption. This makes it particularly suited for live broadcasting in developing countries with infrastructure as limited as ± 30 kbps, as it results in a far more streamlined/seamless real-time video-streaming experience.

The project is currently in the commercial phase licensed by Tuluntulu (<http://www.tuluntulu.com/>) who are readying this product for a market that will soon have their bandwidth challenges effectively tackled.

Professor Dlodlo, from the Communications Research Group in the Department of Electrical Engineering, said, "The award would not have been possible without the five postgraduate



The Communications Research Group from 2009: Back Row, left to right: Damiano Kamanaga, Mthulisi Velepini, 2nd row, left to right: Guy-Alain Lusilao-Zodi, Rodgers Mba, Nakato Kakande, Sabelo Dlamini, Gerhard De Jager, Front row, Left to right: Mzabalazo Lupupa, Sikute Sankama, Mqhele Dlodlo, Alexandru Murgu and Smart Lubobya (missing in the photograph are Rohini Koduri, Lehlohonolo Mohasi and Veronica Sentongo)

students who contributed to the project." They were Veronica Sentongo, Josephine Nakato Kakande, Smart Charles Lubobya, Naga Rohini Koduri,

EPPEI meets at NMMU on Mandela Day

The Eskom Materials Science Specialisation area was established at UCT's Centre for Materials Engineering (CME) at the beginning of 2012. It forms part of the Eskom Power Plant Engineering Institute (EPPEI), which is set to grow the expertise and knowledge in power generation at Eskom's coal-fired power stations. Eskom employees return to university as students to conduct postgraduate research in power-plant-material-related projects.

On 18 July, Mandela Day, members of the EPPEI's Materials Science Specialisation group met at the Nelson Mandela Metropolitan University's Centre for High Resolution Transmission Microscopy (CHRTEM). In commemoration of our former president Nelson Rolihlahla Mandela, EPPEI manager Malcolm Fawks opened the meeting with a multi-faith prayer. At the meeting, three EPPEI master's students were given the opportunity to present their progress to date, and a newly registered master's and a PhD EPPEI student presented their research plans.

As part of the Eskom and UCT collaboration, Professor Robert Knutsen, director of CME, partnered with CHRTEM, which will provide substantial support in advanced materials characterisation of power-plant materials using high-resolution electron microscopy. CHRTEM, headed by Professor Jan Neethling, hosts a suite of electron microscopes of world-class standard. Dr Johan Westraadhas been employed to assist EPPEI students with materials characterisation. Professor Knutsen has also established collaboration between UCT and Stellenbosch University through Dr Thorsten Becker, a former CME student.



Eskom managers, five postgraduate Eskom employees, CME staff, University of Stellenbosch academic and two staff members from CHRTEM who attended the meeting

Professor Bernhard Sonderegger, a specialist in modelling of mechanical material behaviour, joined CME in the Materials Specialisation research chair position. He graduated with a PhD from the University of Graz in Austria in 2005.

Even though the group was not actively involved in the 67-minute activities for Mandela Day, everyone in attendance was working towards a goal that will benefit all South Africans, by providing affordable and reliable electricity and developing human capital, as well as intellectual property, for South Africa, in South Africa.

Architecture helping ease the difficulties of daily life in a township

During the June vacation, UCT's second-year architecture students, together with staff members, the local community, a local school art group and the private sector, helped to construct the fourth annual washing platform situated in the Imizamo Yethu settlement in Hout Bay.

The platforms provide additional services, more dignified places for water collection, spaces for the washing of clothes, and the integration of these with shared toilet facilities where these are in close proximity. The platforms also serve as social gathering spaces and cleaner areas for children to play.

In Imizamo Yethu, an estimated 9464 households (as surveyed by the Solid Waste Department of the City of Cape Town in May 2011) make use of shared toilets and taps. The service ratio in Imizamo Yethu is an average of 61.1 households per toilet and a staggering 394.3 households per tap.

The design of the platform and its parts has been integrated into the course curriculum, and after designs had been developed and the necessary planning and community liaison had been completed, the project moved onto site. The students did earthworks, built formwork, installed reinforcing, mixed concrete, built walls, made mosaics, painted and even made a roof structure, all in conjunction with some of the members of the community. They had also constructed precast concrete components in preparation for this event ahead of the time and these elements make up a part of the platform. A local school art group called Lalela was involved for the second year running to make mosaics for the precast pavers that were manufactured by the students. The involvement of the private sector has again been one of the most successful aspects of this year's platform since most of the costs are covered through either monetary donations or material donations.

Another interesting aspect of this year's platform was the re-use of timber floor planks. In December the Centlivres building suffered some water damage, which meant that substantial portions of timber flooring had to be removed. These floor planks were then cut to specific sizes and used for a temporary art installation by the artist Aeneas Wilder in conjunction with August Art, before being recycled again for use on the platform. The planks were predrilled and threaded onto tensile cables to provide a suspended roof structure, which now provides the washing area with some much-needed shade.



Before



After



After

Faculty News

Welcome to new staff

Mr Nabeel Hussain joined the Centre for Catalysis Research as a Research Officer on 1 April 2013.

Dr Ramesh Govind joined the Division of Geomatics as a Senior Lecturer on 1 June 2013.

Dr Siew Leng Tai joined the Centre for Bioprocess Engineering as a Senior Lecturer on 1 June 2013.

Mr Kyle Hauslaib joined the Department of Chemical Engineering as a Chief Technical Officer on 8 June 2013.

Mr Loyiso Louw joined the EBE Faculty Office as a Departmental Assistant on 1 July 2013.

Mr Lawrence Bbosa joined the Centre for Minerals Research as a Lecturer on 1 July 2013.

Resignations

Mrs Rene Toerien left the Department of Chemical Engineering at the end of June. She was the co-ordinator of the Chemical Engineering Schools Project, which was involved in the development and distribution of curriculum-aligned resource materials for high school physical science teachers throughout South Africa. She is in the process of registering for her PhD with the School of Education.



The Dean, Rene and Alison Lewis at Rene's farewell tea.

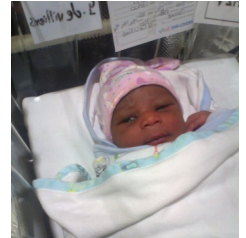
Mrs Margo Rathan, the postgraduate officer in the Faculty Office, left on 24 July and joined the Health Sciences Faculty at the beginning of August.

Mr Michael Champanis has resigned from the Department of Civil Engineering and will be leaving at the end of July.

Congratulations

Dr Olabisi Falowo from the Department of Electrical Engineering and his wife Mehafo are the proud parents of a little boy, John Oluwaseun Falowo, who was born on 19 May 2013.

Pierre Bizimana from the Department of Electrical Engineering and his wife, Mauwa, are the proud parents of Benjamin, who was born on 11 June 2013.



Visitors to the Faculty



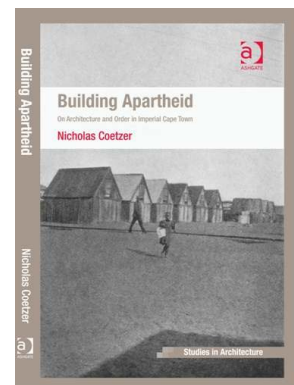
On 17 April, Professor Ali Baghai-Wadji from the Department of Electrical Engineering hosted a high-level delegation from Beijing Institute of Technology, Beijing, China. Professor Baghai-Wadji arranged for the delegation to spend time in various research groups and to meet with a number of senior executives.

New Book—hot off the press

Congratulations to A/Professor Nic Coetzer on his new book *Building Apartheid—On Architecture and Order in Imperial Cape Town* (Ashgate 2013). The book explores how imperialist architecture laid a foundation for apartheid spatialisation of Cape Town.

A younger generation of scholars is now rethinking the architectural history of South Africa, and with this book, Nic Coetzer proudly joins their ranks. He provides a fascinating yet chilling tale of how British garden city planning and housing design played a role in racial segregation in Cape Town, creating appalling social problems which would have ramifications for decades after.

Murray Fraser, UCL Bartlett School of Architecture, UK



Emthonjeni – a place of meeting

A team of academics from UCT's School of Architecture, Planning & Geomatics teamed up with Sustainable Urban Neighbourhood Development (SUN), the community of Monwabisi Park and professional consultants to develop a public space which serves as a site for improving water collection and surface waste-water disposal, as well as creating a place of safety for one of the City of Cape Town's Violence Prevention through Urban Upgrading programme (VPUU) outreach initiatives.

As part of the wider crime-prevention strategy, SUN-VPUU proposed a series of small public spaces as bases for Early Childhood Development outreach activities for children who cannot afford day-care fees. Through a participatory process, the space was named "Emthonjeni" after the Xhosa word for a well point.

Traditionally the Emthonjeni not only served as a water resource, but also as a place of meeting, especially for women, and where children could play safely under their supervision. Transposed into the urban informal context, the Emthonjeni's traditional value was sought to be reinterpreted, socially as well as materially.

SUN-VPUU offered UCT a site within Monwabisi to develop an Emthonjeni. This project is one of the first conceptually conceived urban Emthonjeni.

The academic research team: Dr Tom Sanya, Fadly Isaacs, Liana Muller, Prof Nic Coetzer [all from the UCT School of Architecture, Planning and Geomatics], Dr Bob Osano (UCT), Doreen Kyosimire (Makerere University, Uganda), Dr Carol

Azungi-Dralega (Western Norway Research Institute, Norway).

Professional Consultants: (all services pro bono): Jacob Parker Architects, Talani Quantity Surveyors, Bergstan Engineering.

The project was funded by the Carnegie Corporation through UCT's Programme for the Enhancement of Research Capacity (PERC).



Dr Tom Sanya at the Emthonjeni hand-over ceremony on 10 June.

WUN grant and NRF award for ACC researcher



Dr Mercy Brown-Luthango, a research officer in the African Centre for Cities, received a grant from the Worldwide Universities Network (WUN), as well as an NRF Thuthuka award.

WUN comprises 19 research-intensive institutions spanning six continents, and UCT is one of them. WUN creates

opportunities for international collaboration in research and graduate education. Mercy applied for a research mobility grant and visited the University of Sheffield, one of the partner universities. Dr Paula Meth from the Department of Town and Regional Planning at the University of Sheffield has similar research interests. They are looking at the impact of upgrading informal settlements and how the upgrading affects violence in the community. Dr Meth has done her research work in Durban and Mercy in Mitchell's Plain, Cape Town. They will be comparing the work they have done in the different cities.

Mercy received the NRF Thuthuka award for her research project on enhancing safety through the upgrading of informal settlements. She looks at the different types of upgrading, like in-situ upgrades and the provision of basic services – sanitation, water, and other public infrastructure and how this impacts on the nature and extent of violence.



Nomination for Green Africa Award

Emeritus Professor Heinz Ruther was nominated for a Green Africa Award. The Nomination Committee, composed of local and international experts in sustainability fields, nominated Professor Ruther for the award. They said they had come

across positive reviews on the work he is doing regarding heritage conservation initiatives across Africa. Over the past seven years the Zamani Project has documented some 40 sites in eleven African countries, including South Africa. The initiative provides material for conservation, education, research and site management and aims to increase awareness of African heritage, internationally and in Africa.

Student happenings

The Barry van Wyk Award is presented annually to the author of the best final-year dissertation on a geotechnical topic at a South African university.

Charles Warren-Codrington, who graduated with his BSc in Civil Engineering in 2011, received the award for his dissertation titled "An investigation into the stability of structures adjacent to bulk excavations for the University of Cape Town's new engineering building".

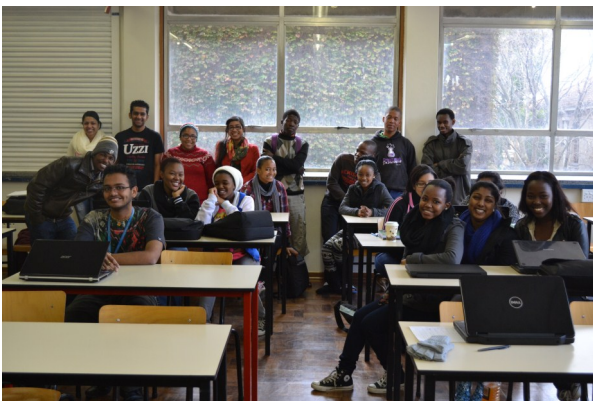
Charles was supervised by Dr Denis Kalumba and is presently in the second year of his master's degree.



Boot camp

Over the June/July holidays, Chemical Engineering and Civil Engineering held boot camps for first, second and third-year students who were identified as students at risk in CHE1005W; CHE3044F; CHE3047F and CIV2001F.

The students had to attend and participate 100% in the boot-camp activities, which took place over three weeks. This was followed by an exam.



Social Infrastructures elective



33 students signed up for the exciting new Social Infrastructures elective course which is run in the 2nd semester. The course aims to expose students to new ways of learning about important global issues such as climate change, technology, cities, social justice, engagement with communities and sustainable development. The course is convened by Dr Janice McMillan of CHED.

EBESC getting involved.



The EBESC members were active during Mandela Day, getting students to write messages to Madiba and tell them what they were doing for their 67 minutes. Members also supported the HIV/AIDS testing campaign which took place on Monday 22 July. On Wednesday 24 July the EBESC hosted an Academic Exclusion talk by A/Professor Brandon Collier-Reed.

New EBEPG student council



The 2013/2014 EBE student council was elected in July and will serve its term to June 2014. The members' first activity was to support the HIV/AIDS testing campaign on Monday 22 July

| Portfolio | Name & Surname |
|----------------------------|--------------------------|
| Chairperson | Lisalokuhle Mbobo |
| Vice – Chairperson | Nothando Khumalo |
| Secretary General | John Ramatsebe |
| Treasurer | Emma- Kosikee Awoha |
| Academics | Chux |
| Events Co-ordinator | Uyuenendiwanyyi Mandavha |
| Sponsorships | Kurai Gombiro |
| Marketing & Communications | Ian Gallaher |
| Interdepartmental Rep. | Bridget Sikhondze |
| International Student Rep | Gavin Nagawa |
| Outreach | Livuwani Magidi |

EBE reaching out



Our heartfelt thanks go out to staff from EBE for coming to our assistance by responding to our request to collect items for the Kosovo crèches. Through your support children in the crèches of Kosovo are actively learning by means of the Montessori Education system and enjoying every bit of it.

We have a partnership with the 15 shack crèches there, affecting 430 pre-schoolers. Ultimately we hope to provide improved quality educare centres for these 0-6 year olds who live in difficult circumstances.

Thank you once again for helping us fulfil our mandate to help those vulnerable children who cannot help themselves. We believe that it is not just our privilege, but our responsibility, and it is awesome that you have contributed in making this a reality with us.

Glenda Monayong
Ubomi Administrator



Thank you to everyone who opened up the hearts to Mncedi Magwevana, who lost his wife and his eleven-year old daughter in a shack fire. His three-year-old is making progress but will be in the Red Cross

Hospital until December.

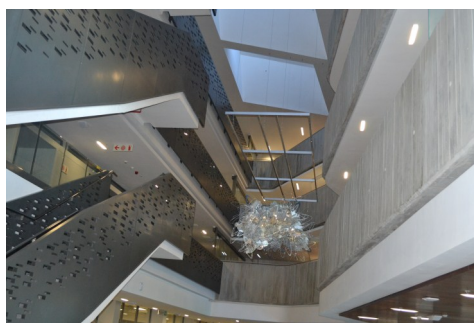
We raised R4 000 and many bags of donated clothes, foods, blankets, and kitchenware. It brought a little happiness into his life. Thank you!

Building Infrastructure

The practical completion of the New Engineering Building happened in early May. The contractors are now busy with the 90-day de-snagging phase. In August the work's completion stage will occur and the contractors will hand the building over to the university.

The Dean's Suite and the Faculty Office staff moved into their new space on the 5th level of the New Building. The Finance Section and Continuing Professional Development moved into their space on the 6th level.

Phase 1 of the Centlivres Building refurbishment is nearing completion and Phase 2 will begin on the lower floors of the building after the final-year exams have been completed.



Architecture and Construction Economics and Management will move out of the building - back into the Zozos and the space in the Maintenance Building - over December.

The University Council has given approval for the earthworks and the retaining wall for the Teaching and Learning Building. They are waiting for the City to sign off the plans so the main construction work can begin. The completion date is set for July

2014, when Construction Economics and Management will move into the 5th floor of the building..

Minor alterations have started in the office spaces in the Department of Mechanical Engineering

School programmes

The holidays were busy with a number of school programmes.

- GirlEng had a successful programme with over 160 girls attending from schools across the Peninsula. Many alumni attended to give them talks about their careers and the EBESC members were on hand to give input on what they are studying.
- 100-UP programme— 100 Grade 11 learners spent time at UCT finding out about the different study options at UCT.
- SAICA hosted its annual camp at Cape Academy in Tokai and EBE was invited to exhibit to interact with the top grade 12 learners from around the Western Cape who may not be considering accounting as a career.
- 160 learners and their teachers from Mbilwi High School spent the day at UCT on 18 July. Mbilwi is commonly regarded as the best-performing former DET school in the country, and is a strong feeder to the EBE Faculty.



Understanding our diverse and multi-cultural cities

Stella Papanicolaou, a third-year architecture lecturer, made contact with an architect from Dallas, Peter Goldstein, who is currently in Cape Town on a Fulbright Scholarship.

Peter's scholarship involves working with local high-school children, interested in the arts and the environment, to create a map, or "portrait" of the city that includes cultural and historical information, coupled with the student experiences in their neighbourhoods and community.

On 7 May, Stella scheduled a studio session for the best third-year mapping projects to be presented to the class. Peter attended the presentations and brought along 45 high-school learners from COSAT, Oude Molen and St George's Grammar



with who he is working to create a map of the city.

The 45 learners were given a talk by Simone Le Grange, and a tour of the school by second-year architecture students, and attended the mapping presentations with the third-years.

Peter said, "I thought the third-year mapping presentations were outstanding and the 45 visiting high-school students left UCT

inspired, and eager to continue working on their mapping project of the city." Through this project, Peter hopes to open doors for students into the architectural and design professions, and encourage a deeper understanding of the diverse and multicultural cities of today's world.

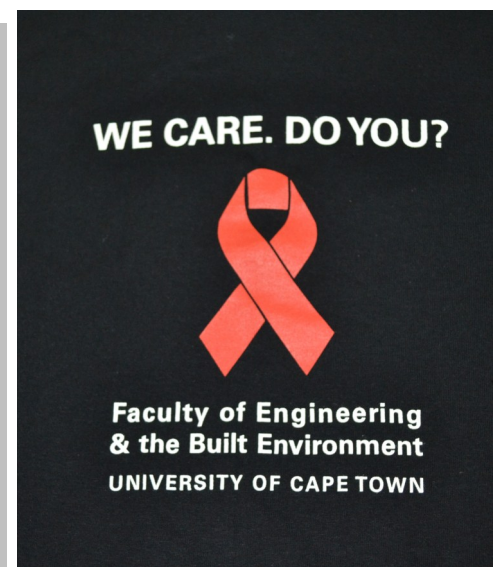
Safety Programme



The faculty's annual safety programme was held from 15 to 19 July All

departments organised a safety programme specific to their departmental needs. The aim of safety week is to raise the profile of safety to staff and students. It is to send a message, which is underpinned by the faculty's goal of Zero Harm, to change the mindset and to build a positive culture around safety. On Wednesday 17 July James Flint was

the guest speaker at the plenary safety lecture. James is the national SHERQ advisor for the South African Federation of Civil Engineering Contractors. He emphasised the increased need for safety in the workplace. 2 400 inspectors are to be trained and employed to enforce safety. There is a new OSH act coming out which stipulates increases in fines for companies—from R4 million for fatalities to R50 000 for basic safety faults. James's message to the students was to embrace SHERQ as part of the job and not as an add-on.



Inspiring speaker at Western Cape alumni event

Denis Goldberg, a 1953 civil engineering graduate, was the guest speaker at the first Western Cape EBE Alumni networking event, held on 5 June at Hiddingh campus. There was a great turn-out, with alumni ranging from recent graduates to a 1943 graduate.

Denis celebrated his 80th birthday this year and is still very actively involved in his community work. He was active in the struggle against apartheid, and was a member of the South African Communist Party, and a leader of the Congress of Democrats. During the State of Emergency in 1960, he was detained for 4 months without trial. In 1963, he received a banning order and was one of the defendants in the Rivonia Trial in 1964 (along with Walter Sisulu, Govan Mbeki and Nelson Mandela, to name a few). Goldberg was sentenced to life imprisonment. He was released in 1985, after 22 years in prison and went into exile in London. He returned to South Africa in 2002. In 2010 he published his autobiography,



Denis Goldberg with Heloise Greef, a 2012 Mechatronics graduate

The Mission, A Life for Freedom in South Africa. He is a very active social campaigner and Founder of Community H.E.A.R.T.

His talk was a heart-warming and at times humorous autobiographical journey. He challenged engineering and built environment professionals about their role in building the new South Africa. Denis is still very active and passionate about improving the living standards of our poor communities. He sticks to his belief in humanity, in dignity, in equality

and in freedom.

He wishes he was now a young graduate able to fulfil his dream of building for people, all our people. Building a South Africa in which we can truly say that it belongs to all of us.

Denis said, "We have a new land to build which is as important as the built environment. Our humanity calls on us to fulfil the aspirations of our Bill of Rights, Chapter 2 of our Constitution. It is a cornerstone of democracy in South Africa. It enshrines the rights of all people in our country and affirms the democratic values of human dignity, equality and freedom."

"We few, we educated, therefore, privileged and visionary few, you and me, we are going to make it happen, aren't we?" he added.

Thembisa Msuseni, a 2009 Construction Studies graduate, said, "I was so inspired by Denis. It is an inspiration like this that catapults us to do more, be more."

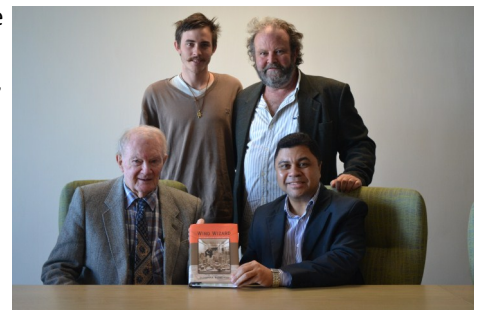
Alumni giving back to inspire young engineers

On Friday 28 June, the Dean hosted Tony Davenport (1981 civil engineering graduate) his father Emeritus Professor Rodney Davenport, (junior lecturer in the history department at UCT from 1953 to 1965) and Tony's son Justin, an Electro-Mechanical engineering student at UCT. The occasion was to hand over *The Wind Wizard*, a biography of Alan Davenport, the father of modern wind engineering, who investigated how wind navigates the obstacle course of the earth's natural and built environments - and how, when not properly heeded, wind causes buildings and bridges to teeter unduly, sway with abandon, and even collapse. Tony said, "Alan's story and achievements are inspirational to young engineers, and it is an honour to contribute this small memory to the faculty." Alan was the brother of Emeritus Professor Rodney Davenport and passed away

three years ago. He was a Professor at the University of Western Ontario and was well known for his work and, in particular, the development of the Boundary Layer Wind Tunnel Laboratory, which has been an international leader in research and testing. Many of the tallest buildings and largest bridges in the world were tested in the laboratory.

Prof Davenport said Alan's work was all about safety and what impact his research had made on societies. "Alan cared for people and his desire was to make the world a better place through the application of knowledge."

Alan grew up in South Africa and attended school at Michaelhouse before attending Cambridge University. He maintained strong ties to South Africa and was an acquaintance of Professor John Martin, a previous Dean of the Engineering Faculty at UCT.



Justin and Tony Davenport, Emeritus Professor Rodney Davenport and the Dean, Professor Francis Petersen

Professor Francis Petersen, present Dean of the Faculty, said, "It was very appropriate that the handover of the book took place in the John Martin Board Room. We greatly appreciate our alumni giving back to the Faculty."

EBE Graduation Ball

20 September at Suikerbossie Restaurant.

Book your seats with the EBE undergraduate student council