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TECHNOLOGY REVOLUTION EMPLOYED FOR innovative teaching



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“The wave of technological innovation, globalisation, environmental pressures and societal demands on universities require a quantum leap in Stellenbosch University’s thinking, practices and facilities. The timeous construction of a future-oriented teaching and learning centre for campus teaching and virtual learning will enable SU to use its facilities and technology to achieve greater student success and promote systemic sustainability.”

*-Prof H Russel Botman,
Rector and Vice-Chancellor*



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New teaching centre turns challenges into opportunities

As many other tertiary education institutions, Stellenbosch University (SU) also faces the challenge of enormous training needs in South Africa and Africa when seen against the demands of a sophisticated global economy.

Mitigating the backlogs and deficiencies in the secondary education system, meeting the growing need for access to higher education by a significantly higher number of students, and improving their chances of success are among the biggest challenges that universities need to overcome.

As an academic and research leader, Stellenbosch University has identified future-oriented, technologically advanced and innovative campus development as a solution. By combining the possibilities of the electronic communication revolution with visionary ideas about the modern classroom and dynamic teaching, the University seeks to reconcile growth, development and sustainability, and to take the lead in the 21st century.

In the words of **Prof Russell Lincoln Ackoff** (1919–2009), lecturer at the Wharton School, University of Pennsylvania, and pioneer in the field of organisational operations, systemic thought and management sciences:

“Development is not growth. Organisations and societies may grow even while they are destroying their development capacity. Garbage heaps grow, universities grow, cemeteries grow, the number of houses and townships in an urban area may grow, but the growth of such may be an indicator of

decline – not development. Development is the increase in the desire (motivation) and capacity/capability of the members of a society (or organisation) to satisfy their own legitimate objectives and needs as well as those of other members of the organisation or society while also contributing to the context of their existence.”

Based on Ackoff's distinction between growth and development, the management of Stellenbosch University is engaged in a process to ride the wave of technological innovation as best they can in order to ensure that the institution's future growth is accompanied by purposeful and appropriate development.

Achieving SU's strategic foci, i.e. strengthening the knowledge base, promoting diversity and student success, and ensuring the systemic sustainability of the institution, requires purpose-made facilities, infrastructure and technology.

Internationally it has been proven that a more integrated living and learning environment results in greater student success. The paradigm shift in the approach to information provision and the sharing of knowledge is apparent, with much greater emphasis being placed on a multidisciplinary approach. The undergraduate 'chalk and talk' teaching methodology and traditional learning and living environments have become outdated, and the virtual world presents exciting possibilities that seemed inconceivable not too long ago. The various applications of the internet and satellite and cellular technology have already addressed geographic challenges and limitations, and offer students access to the world's leading experts.

Therefore, new facilities are not about constructing physical ivory towers, but about the way in which the

buildings and infrastructure underpin SU's strategic objectives. The nature of the classroom, the technological support of learning material and the learning experience, knowledge transfer through virtual learning, cutting-edge laboratory technology, lateral thinking about housing structures, the innovative utilisation of communal recreational spaces as well as the impact of the institution on the surrounding physical environment and natural resources will ultimately decide the future success, excellence and sustainability of higher-learning institutions.

Moving beyond the classroom (in the broader town and regional context), the University's facilities should also increasingly serve the community by tackling societal problems through a scientific approach, *inter alia* by creating opportunities for experiential learning.

The Campus Master Plan, which serves as framework for SU's facility growth in the next couple of years, takes into account the University's history and architectural heritage as well as current and future perspectives. Factors such as access to town and the main campus, traffic flows and congestion, student and staff mobility, and basic services such as sewerage, sanitation, water and electricity are significant considerations that affect town planning in Stellenbosch.

New teaching and learning centre

New facilities must support the University's vision, goals and strategic objectives. The single biggest priority is the construction of a new teaching and learning centre, as continued growth in most faculties on the Stellenbosch campus has necessitated additional teaching facilities. In line with the shift towards interactive teaching

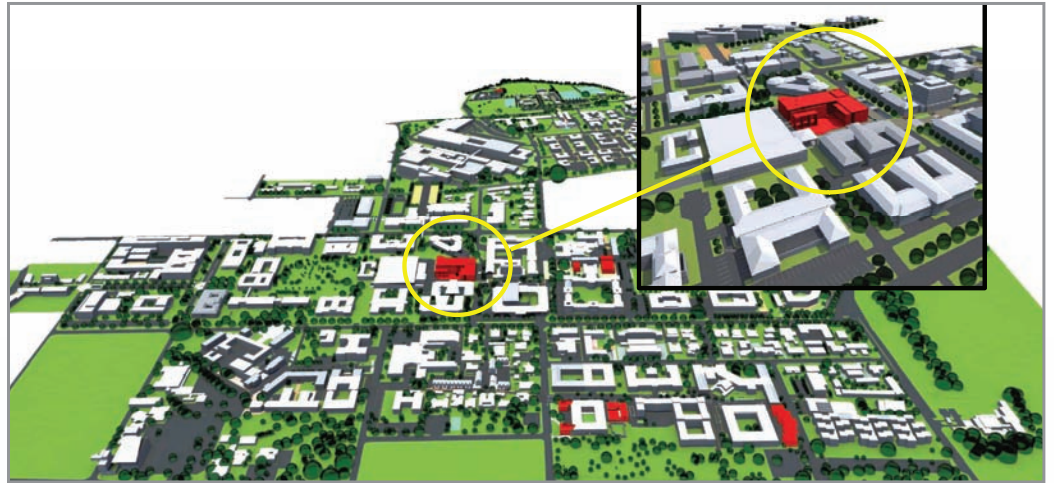
and learning environments and the use of advanced technology, a modern, multipurpose building is also envisaged that will keep pace with 21st-century needs and opportunities. The new-generation lecture halls aim to replace passive learning with an interactive and dynamic teaching experience that is student-centred and promotes group participation in the learning process.

The building will be multifaceted and adaptable to accommodate diverse teaching styles and approaches in contact and telematic teaching. By constructing the teaching and learning centre now, and equipping it with cutting-edge technology to support interactive learning and virtual access to learning material, we obviate future pressures on the physical infrastructure of the town and campus as well as financial resources.

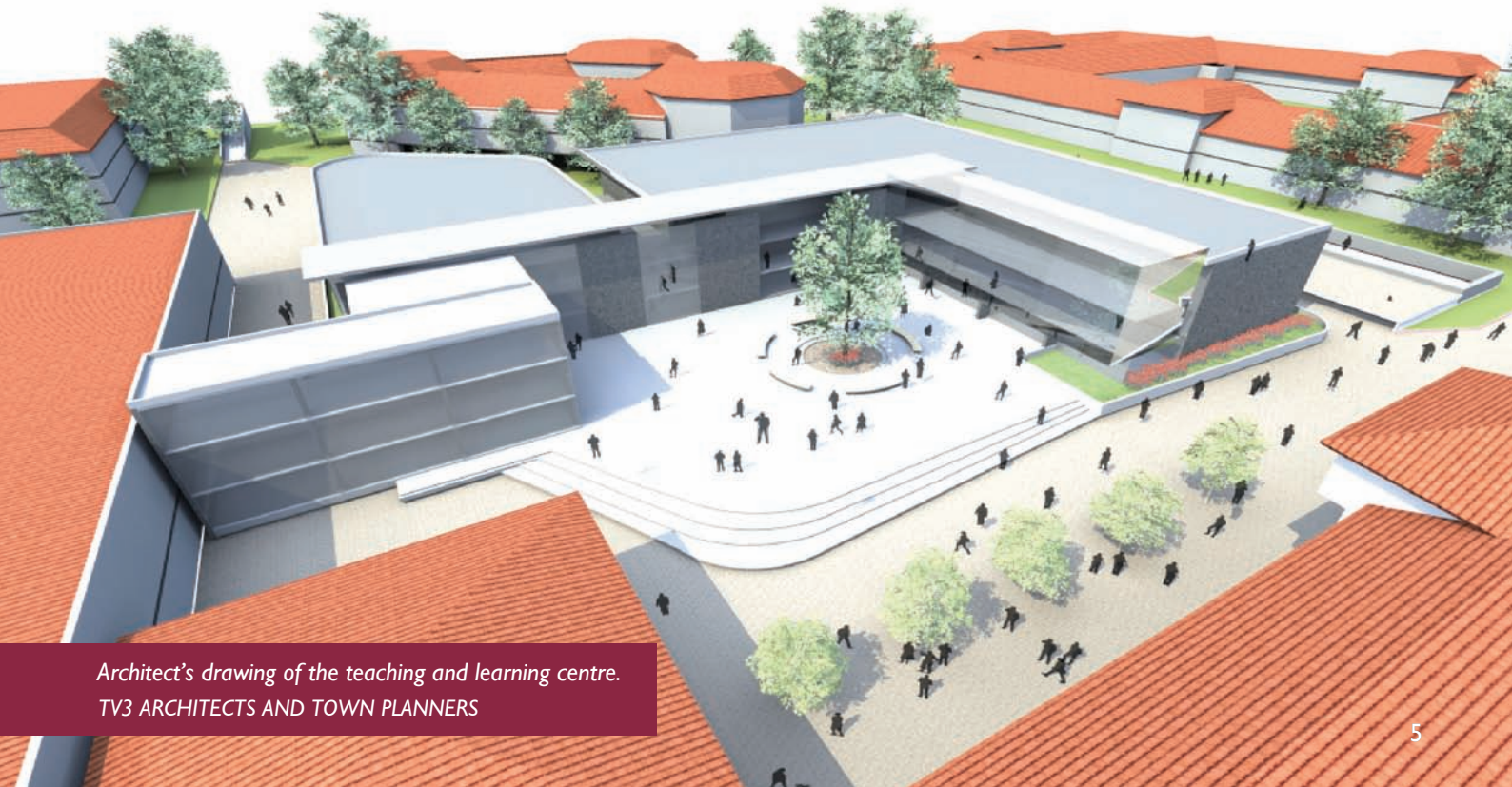
As the focus is shifting towards multidisciplinary teaching as opposed to traditional knowledge silos, the building will be used by all faculties on the Stellenbosch campus. This is in line with the University and the HOPE Project's multidisciplinary approach and is also cost-effective. In this way, we will establish a facility from which most students will benefit. The centre will have a positive domino effect on the central campus by alleviating the pressure on existing, overcrowded learning areas.

Top-quality facilities and technology attract leading experts, and by creating a student-centred teaching environment, student success will be promoted.

SU has committed itself to a sustainable environment and systemic sustainability within the institution. Like the new Facilities Management building, the envisaged teaching and learning centre will also be equipped with innovative 'green' technology to facilitate energy savings, among other benefits.



The teaching and learning centre will replace the parking area behind the Neelsie Student Centre.



Architect's drawing of the teaching and learning centre.
TV3 ARCHITECTS AND TOWN PLANNERS

The centre will house the following venues:

- A 350-seater lecture hall/auditorium.
- Eleven classrooms, offering various seating configurations for between 20 and 300 people. These rooms will be multifunctional and adaptable in size.
- Seven electronic lecture halls, which will also be adaptable to provide seating for between 60 and 360 people.
- Support staff will be accommodated in offices, and the centre will be accessible 24 hours a day.
- The large foyer will be equipped with modern amenities and wireless network connectivity to serve as a multifunctional student area.
- Underground parking will replace the current open-air parking (photo below) adjacent to the Langenhoven Student Centre (Neelsie).



All venues will be equipped with leading-edge devices and technology, which will enable telematic teaching and interactive learning. The teaching and learning centre will cost an estimated R130 million. Structurally and technologically speaking, this innovative centre will be far ahead of similar facilities in the region, and will be particularly useful for hosting academic congresses during university holidays.

How to support SU

Even though the teaching and learning centre has been identified as the foremost priority, this project is not being tackled in isolation. It forms part of Stellenbosch University's Campus Master Plan, which inter alia provides for upgrades to buildings and facilities and additions to campus residences in order to accommodate more students. Upgrades and additions to existing facilities are funded by the University, with the support of the National Department of Higher Education and Training.

To construct the teaching and learning centre, the University is seeking partners who share its vision of excellent teaching and cutting-edge science and who would want to make a tangible contribution to quality training in support of the South African economy. In many areas, SU has already proven its ability to innovate. SU's First-Year Academy, for example – a virtual initiative to improve the pass rate among first-year students – was the first of its kind in South Africa. Similarly, the teaching and learning centre will cause a revolutionary transformation in the African higher-education sector.

There are various ways in which the business sector and individuals can support this unique initiative. It offers a once-in-a-lifetime opportunity to associate a company's brand or an individual's heritage with a visionary facility that will enable a quantum leap in the learning experience at SU. Naming rights will also be considered. Please discuss possible funding options with Stellenbosch University's Development Office.

State-of-the-art facilities to bolster academic excellence

Stellenbosch University (SU) is a leading research-driven university in Africa that, in 2011, for the first time featured on three world university rankings (*Times Higher Education*, *QS World Rankings* and *Leiden Ranking*). For three consecutive years, SU has had the highest number of weighted research outputs per academic staff member of all South African universities. The University boasts 309 NRF-ranked* researchers – the second highest number in the country. SU's Business School is among the few business schools outside Europe that have been accredited by the European Quality Improvement System of the European Foundation for Management Development, while its MBA programme carries accreditation of the British Association of MBAs.

The driving force behind the University's many successes is its 'science for society' approach, which also served as motivation for the HOPE Project (www.thehopeproject.co.za). The relevance of its academic inputs for South African and African communities is of the utmost importance to the University. Hence the decision to focus its research activities on five themes that were derived from the international development agenda, over and above the University's fundamental scientific and theoretical disciplines.

- Eradicating poverty
- Promoting human dignity and health
- Promoting democracy and human rights
- Promoting safety and security
- Promoting a sustainable environment and a competitive industry

Thanks to multiple academic successes, greater prominence in the international higher-education sector and tangible relevance for society, Stellenbosch University has grown into a sought-after partner in postgraduate studies and international collaboration agreements, such as the SKA radio telescope project that was awarded to South Africa and Australia in 2012.

In the next four years, Stellenbosch University will concentrate its activities on four strategic focus areas:

- Strengthening its knowledge base by attracting the best lecturers, researchers and students
- Promoting diversity across racial and cultural boundaries
- Promoting student success through modern facilities and support services, better integration between the learning and living environment, and the development of thought leaders
- Promoting systemic sustainability in the physical, social and financial environment

In order to realise its strategic objectives and to maintain its international status as excellent research institution and preferred partner, Stellenbosch University will have to acquire the necessary facilities and cutting-edge technology to underpin its academic outputs. The Campus Master Plan has been developed to achieve this.

* The quality of research outputs in the space of eight years is determined according to a peer review system. The National Research Foundation (NRF) administers the process. The outcome of the review is a national indicator of research excellence.

PHILANTHROPIC DONATIONS AND SPONSORSHIPS:

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