

Faculty of Engineering and the Built Environment at UCT



Professor Alison Lewis
Dean

6 EBE DEPARTMENTS

APG

ARCHITECTURE (B ARCH)
PLANNING (POST GRAD)
BSC GEOMATICS



CEM

BSC CONSTRUCTION STUDIES
BSC PROPERTY STUDIESS



CHEM

CHEMICAL ENGINEERING



CIV

CIVIL ENGINEERING



ELEC

ELECTRICAL ENGINEERING
ELECTRICAL & COMPUTER ENGINEERING
MECHATRONICS

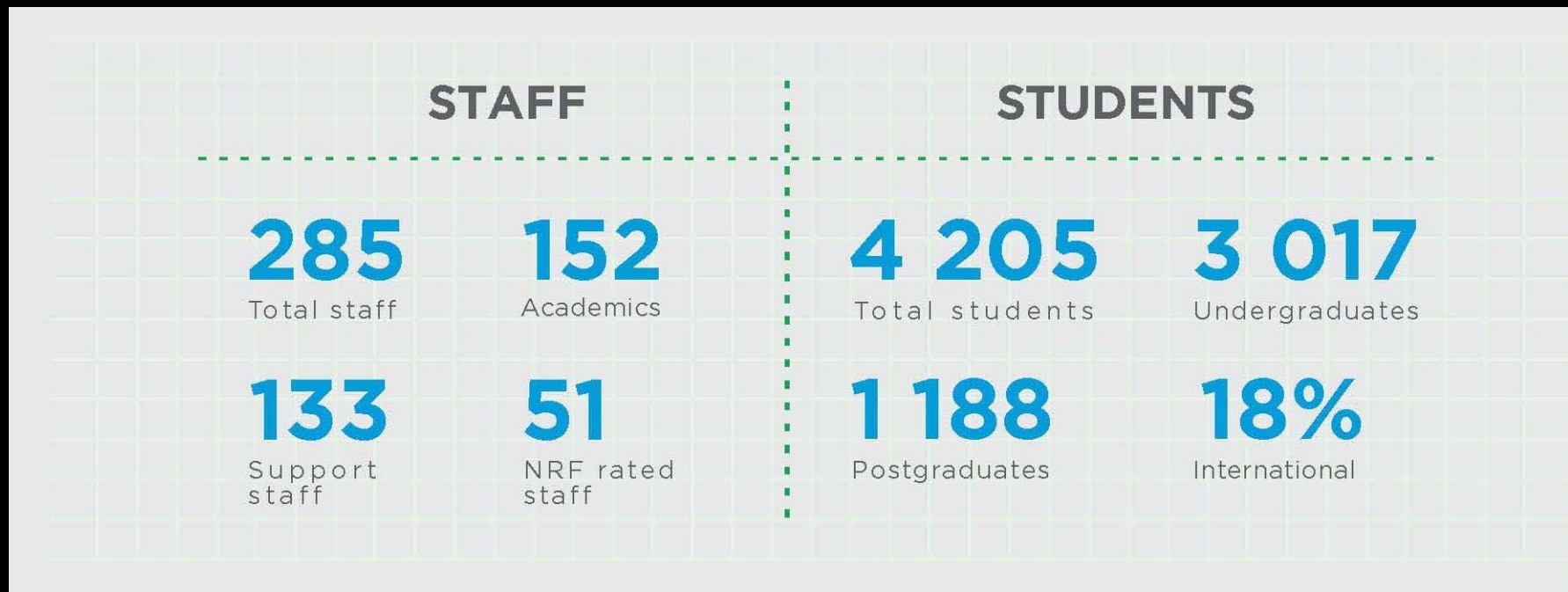


MECH

MECHANICAL ENGINEERING
ELECTRO-MECHANICAL ENGINEERING



EBE staff and students



1. Industry-Academia Integration



1. Industry-Academia Integration



MIT has an **Industrial Liaison Programme** which is considered to be a very effective model for effective technology transfer from academic research to industrial innovation

2. Bridging the gap between Industry/Academia/Profession



Scientific endeavour - Industrial production



Exact	Sufficient
Theoretical	Practical
Slow pace	Fast pace
Deep	Shallow
Questions	Answers



Balancing: & the best of both worlds

Using science to develop understanding that can be used to solve industrial problems



Using industrial problems, know-how and experience to develop science

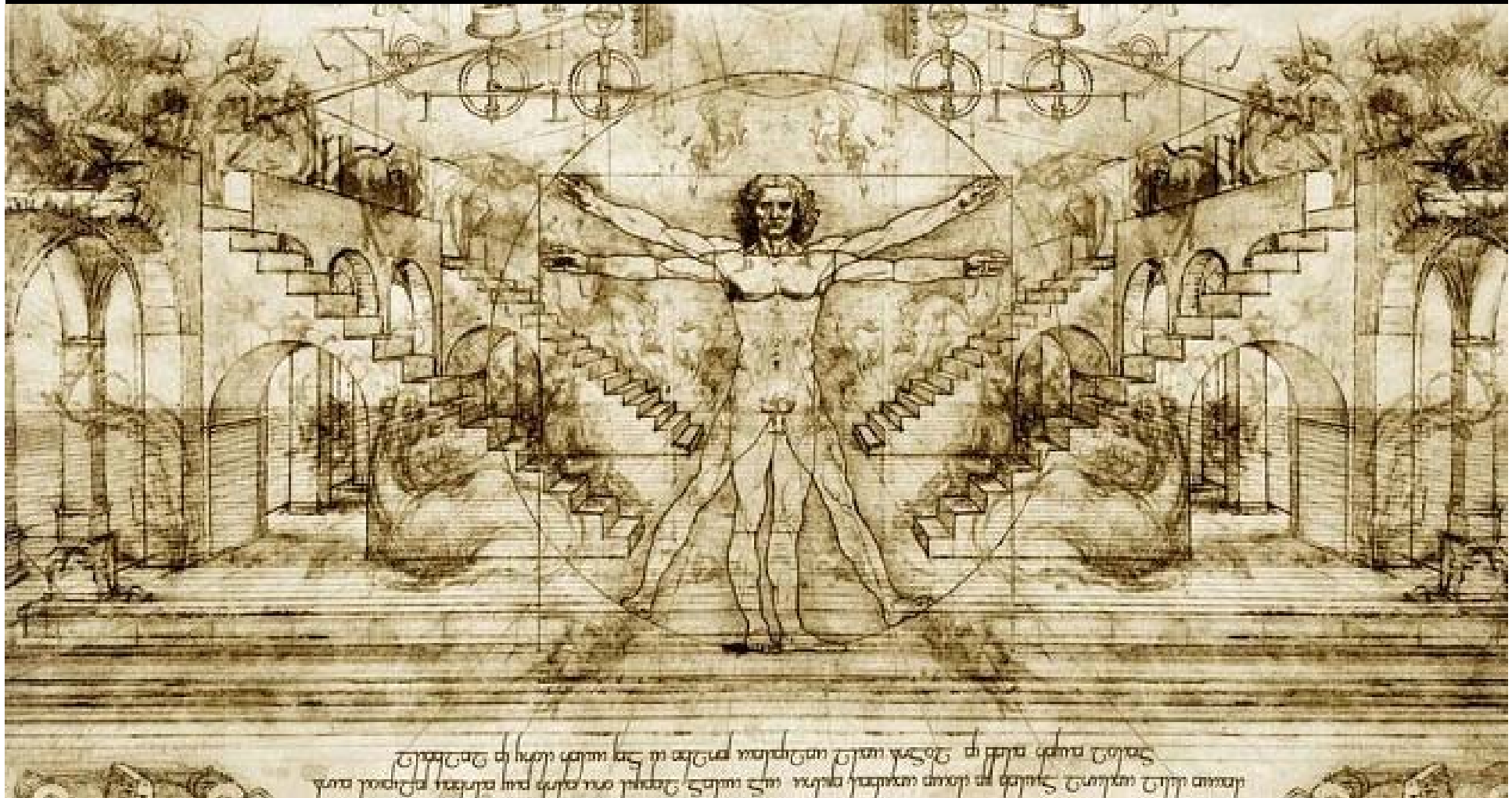


Innovation



"The capability to innovate
and respond to
unexpected change is
crucial to the
competitiveness and
flexibility that ensures an
organisation's long term
survival and prosperity"

3. Promoting our profession



NAE Grand Challenges



NAE GRAND CHALLENGES
FOR ENGINEERING

NATIONAL ACADEMY OF ENGINEERING

Challenges

14 Grand Challenges
for Engineering in the
21st Century





MAKING THE WORLD A
BETTER PLACE

EBE RESEARCH

WWW.EBE.UCT.AC.ZA

EBE RESEARCH: MAKING THE WORLD A BETTER PLACE



WATER

Future Water
Urban Water
Waste Water
Bioprocessing
Crystallisation & Precipitation



URBANISATION

African Centre for Cities
Informal Settlements
Low-cost Housing
Transport
Spatial Planning



ENERGY

Energy Research Centre
Energy Efficiency
Fuel Cells
Radar
Renewable Energy



INNOVATION

Bioengineering
Materials
Robotics
Spin-off Companies
Patents



INFRASTRUCTURE

Transport
Planning
Urban Environmental
Land Surveying
Environmental and Process Systems
Telecommunications



ENVIRONMENT

Sustainable Mining
Acid Mine Drainage
Green Buildings
Sustainable Cities
Renewable Energy
Climate Change



WATER

Future Water / Urban water/ waste water/ Bioprocessing/ Crystallisation & Precipitation / .

URBANISATION

African Centre for Cities / informal settlements / low-cost housing / Transport /Spatial Planning/



ENERGY

Energy Research Cente / Energy Efficiency / Fuel cells / Radar / Renewable energy .

RESEARCH in EBE



Future Water



African Centre
for Cities



Future Energy

Creating hubs for multi/trans disciplinary research
Focussing on big global questions where we have local expertise
Linking our strengths together
Using research led teaching

Future Water – Transdisciplinary themes



Future Water: Franschhoek Water Hub

Research, demonstration and training centre



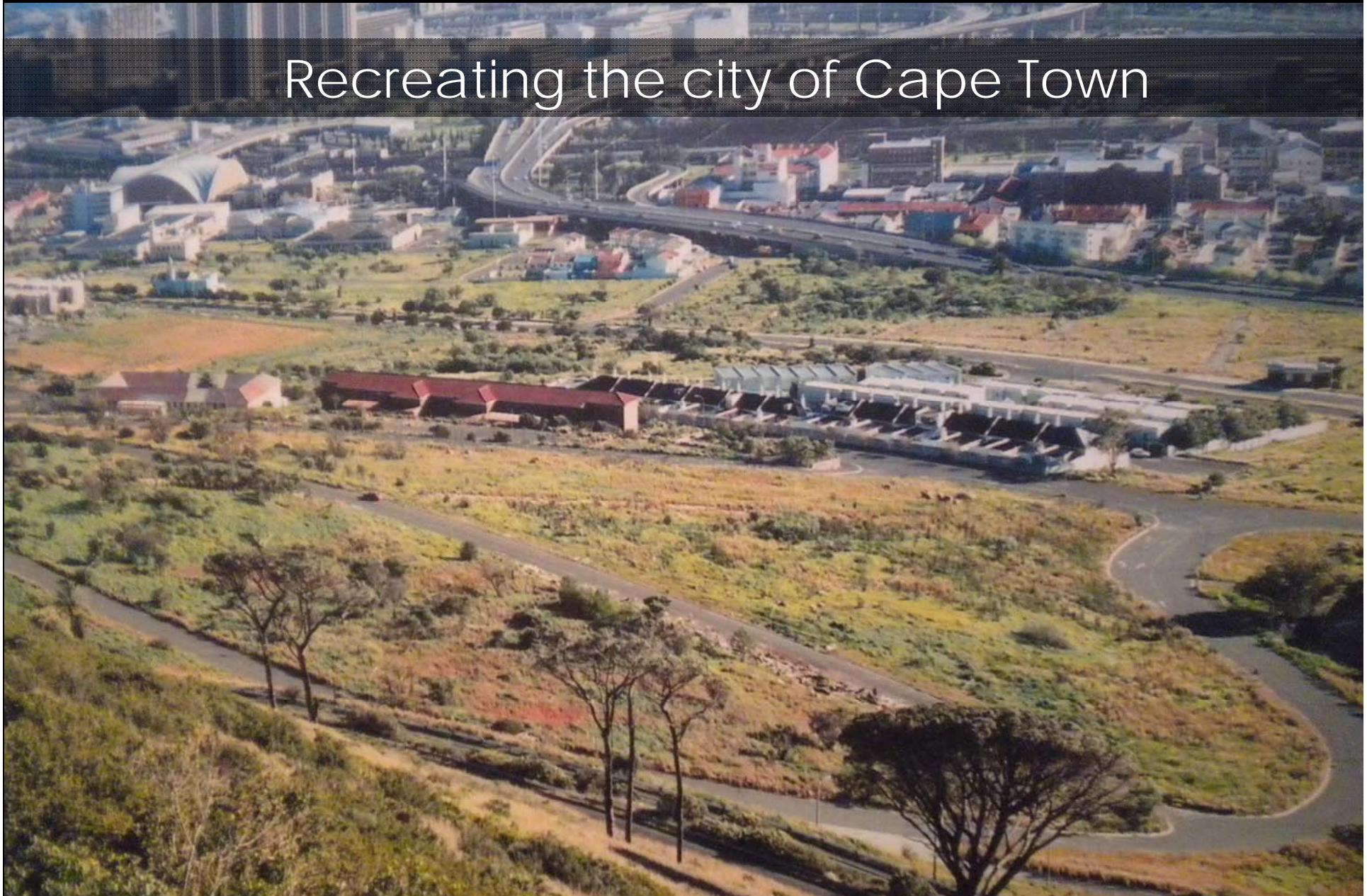
African Centre for Cities

Recreating the city of Cape Town



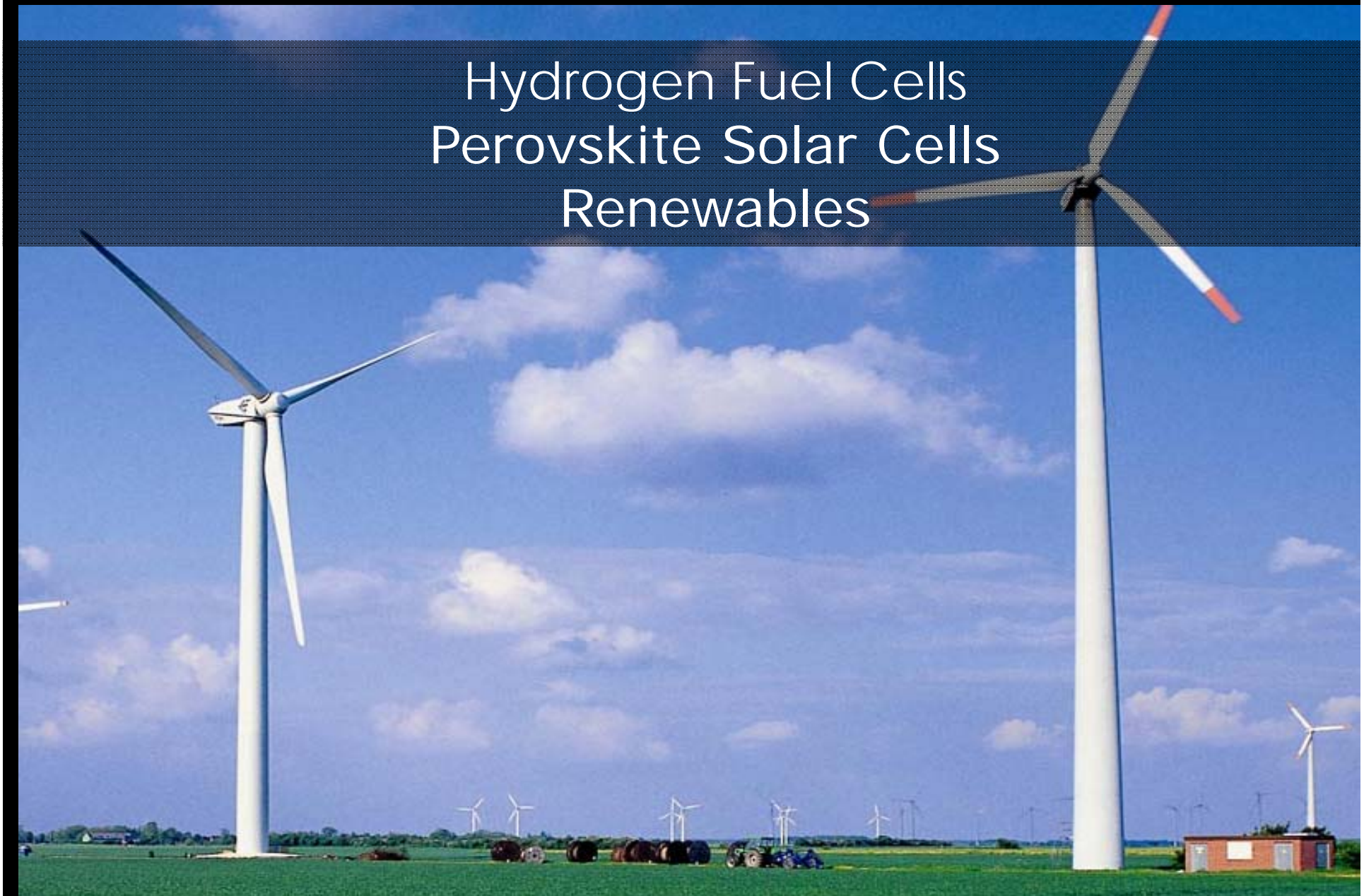
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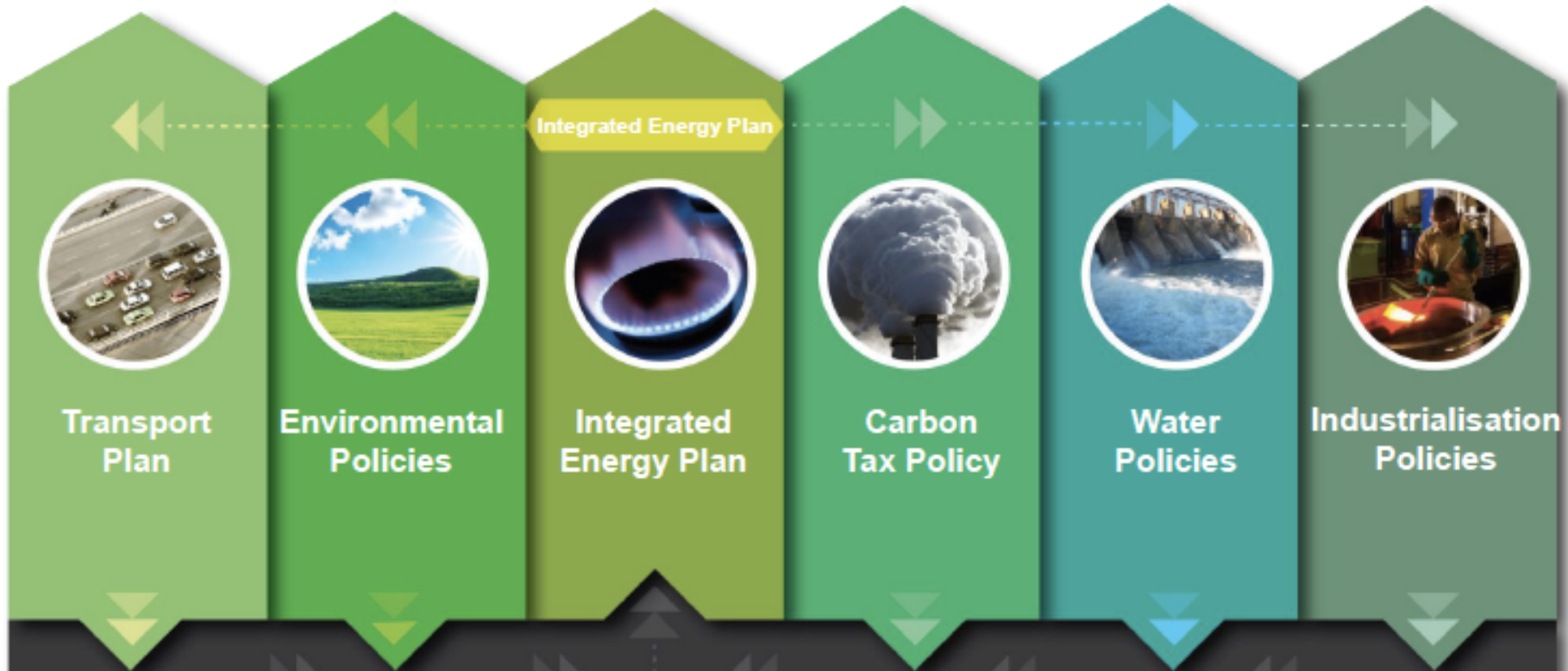
Future Energy

Hydrogen Fuel Cells
Perovskite Solar Cells
Renewables



Input into the National Integrated Energy Plan

NATIONAL DEVELOPMENT PLAN, NEW GROWTH PATH, 9-POINT PLAN



The IEP seeks to quantify and provide feedback on the extent to which policy objectives outside the sector may impact on the attainment of energy sector imperatives and vice versa

Social Responsiveness: Design-build projects

Water Platforms in Imizamayethu



World Design Capital 2014:
Dignified places for water collection, washing & play.

Supporting Entrepreneurs: Why Nut?



Nyasha Mawungwe



Curriculum transformation

Social Infrastructures wins UCT Award

29 Aug 2016 - 13:30

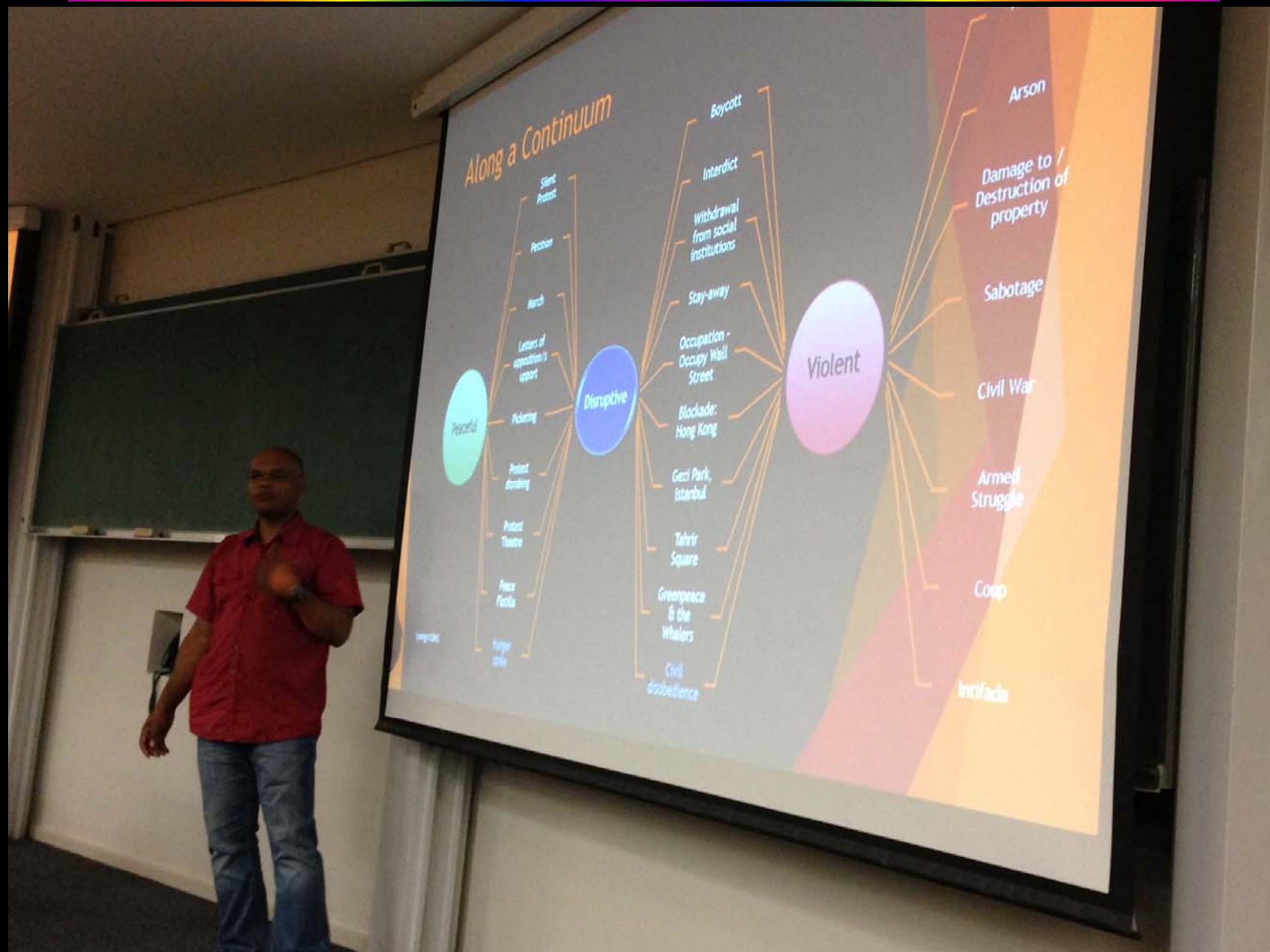
Social Infrastructures, convened by Dr Janice McMillan and headed by Ziyanda Ndzendze-Majombozi and Lindokuhle Njozela, have won the 2016 UCT Collaborative Education Practice Award. The course, located with the Faculty of Engineering and the Built Environment (EBE) provides a social context for emerging professionals to locate their technical and disciplinary knowledge, asking them to think about community engagement and some of the challenges faced by cities in the global South.

The award is given to educational projects which utilise interdisciplinary collaboration and employs innovative pedagogy, while simultaneously drawing on relevant literature, shows responsiveness to monitoring and evaluation, and provides a strong developmental opportunity for students.



Social Infrastructure students at a session at the [Phillipi Horticultural Area](#).

Introduction to protest



Thank you



Our Vision

Vital faculty

Our vision is that the Faculty of Engineering & the Built Environment will become not only a **vital faculty** within the University of Cape Town but the place where the **latest research and relevant technologies** are spearheaded and supported.

Outstanding graduates

We strive to develop **outstanding graduates and scholars, academics and researchers** who are able to think beyond the obvious and are mindful of the bigger picture - men and women with international stature who have sound technical knowledge, who are professional and contribute to society and address socioeconomic challenges and issues through their work.

Benefit society

Through close ties with other universities and institutions on the continent and abroad, we aim to extend networks, increase knowledge and further our purpose of creating knowledge and developing expertise that ultimately benefits society and delivers tangible solutions to the critical issues facing our world.

State's Top 100 most wanted ... skills

Johannesburg - It's the government's Top 100 most-wanted. These are not criminals. They're the sort of people who are really needed but just can't be found.

This is the "National Scarce Skills List: Top 100 occupations in demand".

The list was released by Minister of Higher Education and Training Blade Nzimande a week ago. It's a draft and is open for public comment until June 20.

Engineers of various types dominate the list – there are 11 in the top 20.

These are the top 10: electrical engineers, civil engineers, mechanical engineers, quantity surveyors, programme or project managers, financial managers, physical and engineering science technicians, industrial and production engineers, electricians and chemical engineers.



INDEPENDENT NEWSPAPERS

The list was released by Minister of Higher Education and Training Blade Nzimande a week ago. File photo: Oupa Mokoena

