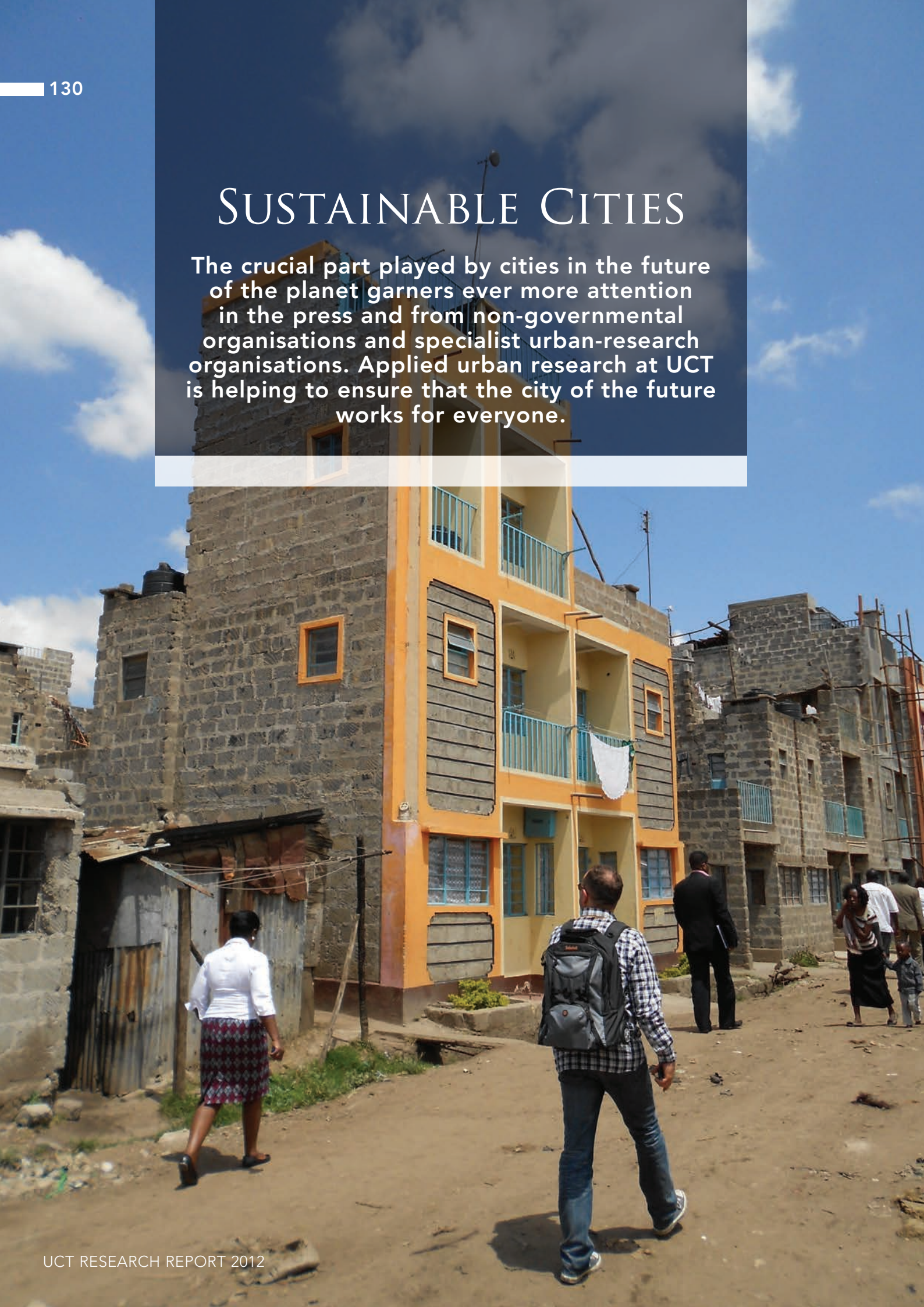


SUSTAINABLE CITIES

The crucial part played by cities in the future of the planet garners ever more attention in the press and from non-governmental organisations and specialist urban-research organisations. Applied urban research at UCT is helping to ensure that the city of the future works for everyone.



Urban issues are increasingly receiving attention in social media websites and blogs, including UrbanAfrica.net, a website managed by the 'State of Cities in Africa' programme hosted by UCT's African Centre for Cities (ACC). Urban affairs is one strand of UCT's suite of strategic research initiatives, this one firmly located in the ACC Signature Theme; careful scrutiny of city governance and urban livelihoods complements another strategic research thrust, the Safety and Violence Initiative. Urban affairs also resonate well with UCT's drive to research the urbanisation of poverty.

During 2012, the African Centre for Cities continued to spearhead applied urban research at UCT, and to be a forum for public and scholarly conversations about pressing urban issues. These include matters of public service delivery, climate change and urban resilience, informality, food security, safety, public housing, public art and public spaces, flooding risk, public health, and governance. Urban transportation is the focus of UCT's Centre for Transport Studies, and there exist multiple close linkages between the research of these two units.

The daunting range of livelihood and policy challenges in all cities of the global South creates an opportunity to reconsider conventional ways of intervening in urban affairs, as well as an opportunity to think differently about cities as places, and how to generate the appropriate knowledge to make them more liveable, sustainable and equal.

Issues include matters of public service delivery, climate change and urban resilience, informality, food security, safety, public housing, public art and public spaces, flooding risk, public health, and governance.

The ACC is passionately vested in all aspects of this work, notably through its published research, and CityLabs and Knowledge Transfer Programmes. As part of its advisory services, in 2012 the ACC Director, Professor Edgar Pieterse, was appointed convenor of the Urban Section of the National Planning Commission, an initiative of government chaired by the Minister in The Presidency. ACC staff, together with other researchers in the Faculty of Engineering & the Built Environment, work across faculties in a highly interdisciplinary research programme. This is illustrated in the strong collaborative links with Environmental Sciences, Planning, Sociology, the African Climate and



Development Initiative, the Energy Research Centre, and the Association of African Planning Schools, and is given impetus by maintaining strong academic and research links with major urban research groups and funders in the UK, Europe, and the USA, while new ties are braiding into Africa, Latin America and India.

During 2012, ACC personnel and affiliates travelled extensively to speak at conferences and meet colleagues in Boston, Dakar, Gothenburg, Johannesburg, Lagos, London, Manchester, Nairobi, New York, Paris, Stockholm and Tokyo. A large delegation participated in the World Urban Forum in Naples, a professional 'shop window' for urban authorities and practitioners. Conferences hosted in Cape Town included one on 'Migration, Urbanization and Food Security in Cities of the Global South', with delegates coming from across Africa as well as from Canada, the Caribbean and India.



Co-produced KNOWLEDGE

A key plank in contemporary Cities research at UCT is the notion of 'co-produced knowledge'. The basis of this idea is that cities are now too large and complex to permit the conceit that any one profession – let alone any single university department – can marshal all the information, insight and resources necessary to deal with the diversity of urban problems.

Questions of sanitation, poverty alleviation, congestion, disease, pollution, physical degradation and unemployment are fundamentally interdisciplinary; part of the reason for the failure to combat these problems is that they have been addressed as distinctive rather than as systemic issues. There has also been profound neglect of the processes of governance and civic leverage in rapidly changing urban formations. Equally, there has been too little attention given to the counter challenges of innovation, fulfilment, affirmation, dignity and hope in the slums that now characterise most of the world's fastest-growing cities in Africa, India, China and Latin America.

The Cities research agenda at UCT aims to keep abreast of these key urban fault lines and prospects by bringing regulators, legislators, scholars, practitioners, citizens and activists into regular contact via conferences, seminars, CityLabs, Think Tanks, and jointly produced research. Informal personal networks make crucial points of contact and knowledge sharing.

One instance of formally co-produced knowledge in our own backyard is the immensely innovative and successful programme of hosting selected City of Cape Town officials in the ACC for two months, and placing PhD students in the City for seven months a year. The students are working with the City on climate-change policy, the 'Green' economy, and land-economy models. Now in its second year, the mutual learning and exchange has exceeded expectations. Support from the





City and from Mistra Urban Futures, an international centre for sustainable urban development, has been vital. A bursary from Bigen Africa for a master's student to conduct research on sustainable settlements in resource-rich parts of South Africa complements the Department of Chemical Engineering's new Master of Philosophy course specialising in sustainable mineral resource development.

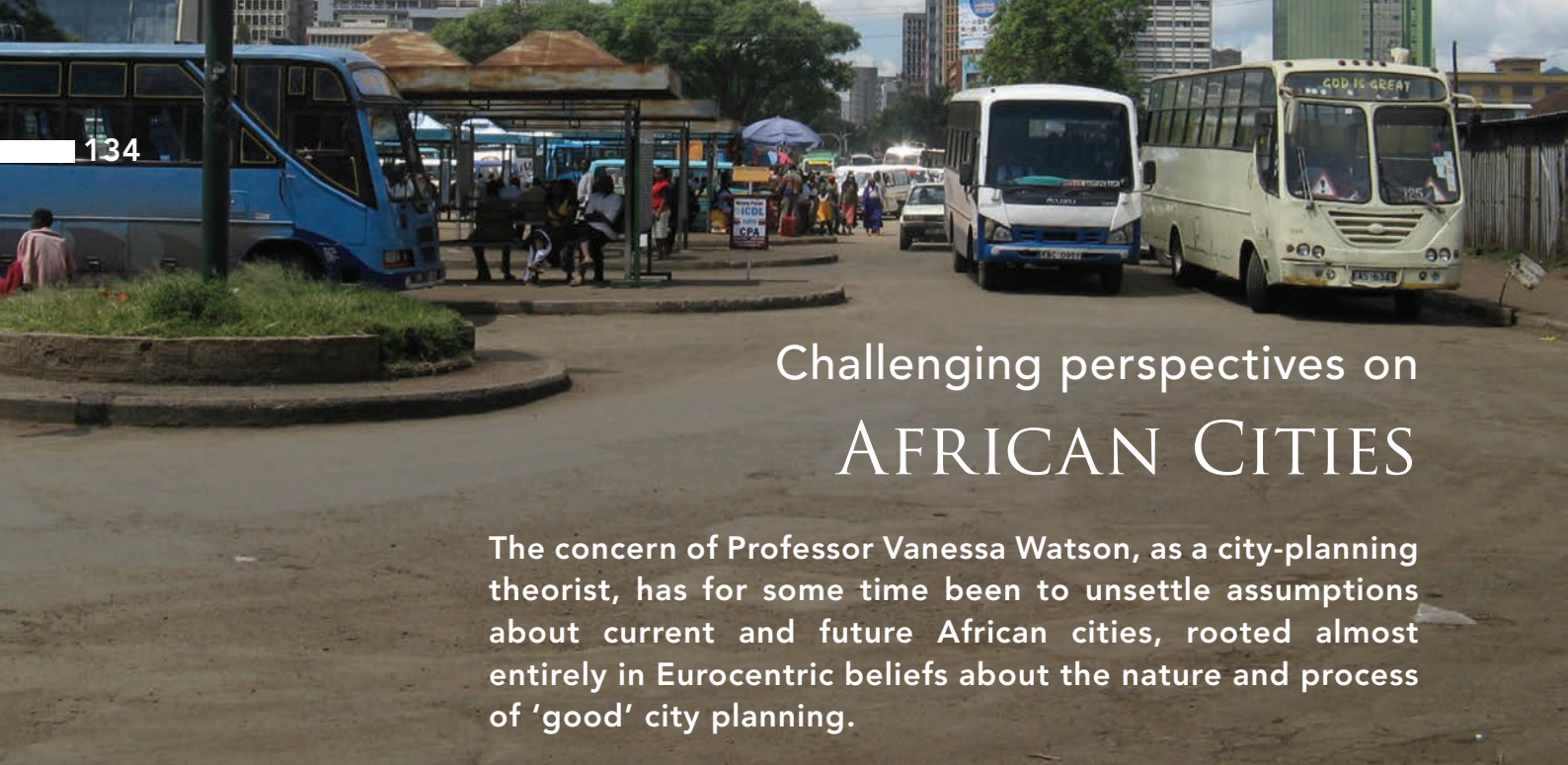
There has been too little attention given to the counter challenges of innovation, fulfilment, affirmation, dignity and hope in the slums that now characterise most of the world's fastest-growing cities in Africa, India, China and Latin America.

Conscientising diverse publics and constituencies about critical urban conditions and inequalities is a key challenge. Likewise, publicising the results of research and inspiring students and citizens with new visions for our cities are crucial facets of any university research programme. The ACC at UCT also supports scholarship in conventional ways by publishing books, chapters and academic papers. Recent publications have covered topics such as urban governance, alcohol in the city, urban ecology, property law, and urban climate change. A research monograph about cultural entrepreneurship as an agent of urban change in West Africa is anticipated from Dr Jenny Mbaye, recipient

of the prestigious Ray Pahl Fellowship allocated to the ACC in 2012.

The ACC also strives to communicate and provoke in unconventional ways, supported in part by a Rockefeller Innovation Award. The *Cityscapes* magazine and the *African Cities Reader* both aim to publish visually striking and innovative pieces that present cities and the lives of their residents in unfamiliar and provocative registers. In this spirit, too, ACC participated in UCT's 'Curate Africa' event in 2012. With support from the Goethe Institute, the ACC was also involved in tracking and reflecting on three public art projects in Johannesburg. In the context of Cape Town having been designated World Design Capital 2014, the ACC partnered with the Social Justice Coalition in convening the 5th annual Irene Grootboom Memorial Dialogues, held at two sites in Khayelitsha, as well as in Woodstock, in the Cape Town CBD, and on the UCT campus. Leading activists, designers, community leaders, academics and Cape Town residents debated how design might be used as an instrument for advancing social justice and reducing urban inequality.

Cities are here to stay. More than that, in the global South metropolitan areas medium-sized cities are home to an increasing number of people, and are the sites where some of the best social and environmental interventions can be made for sustaining economies, ecologies and societies. The diverse research on cities at UCT aims to co-ordinate and catalyse a fair slice of the inquiry, and to contribute significantly to policy that improves the prospects of cities and all their citizens.



Challenging perspectives on AFRICAN CITIES

The concern of Professor Vanessa Watson, as a city-planning theorist, has for some time been to unsettle assumptions about current and future African cities, rooted almost entirely in Eurocentric beliefs about the nature and process of 'good' city planning.

Planning, as an activity of the state (but increasingly also of communities and business), often appears to involve a purely technical set of decisions around the correct location of land-uses, movement routes and so on. Yet, as planning theorists argue, planning is also deeply political, involving usually contested decisions about the allocation of public resources across urban space and legal constraints which can fundamentally affect the lives of urban dwellers. Understanding the socio-technical interface generated by planning processes, how this is shaped by power and politics, and how it can be steered to promote goals such as social justice and sustainability has therefore been a focus of planning theory worldwide.

Visions of 'the good city' usually cite Amsterdam, Stockholm or Portland, taking for granted strong and resourced governments, organised civil society, manageable growth and little informality.



Professor Vanessa Watson

However, in both colonial and post-colonial times, African cities have been on the receiving end of planning theories and policies generated in the 'global North' and universalised to the rest of the globe based on assumptions that urban society and space everywhere is little different from that in Europe or the United States and, if it is, then the task of planning is to shift cities in this direction. Visions of 'the good city' usually cite Amsterdam, Stockholm or Portland, taking for granted strong and resourced governments, organised civil society, manageable growth and little informality. Professor Watson's research has challenged the underlying assumptions of this body of theory and has emphasised the importance of building planning theory from an understanding of context. Given that in years to come an increasing majority of the world's urban population will live in global South cities, and that in Africa the urban population is likely to increase threefold by 2050, she has stressed the urgent need for planning theory with a global South perspective, which takes as its starting point a very different set of assumptions and research methodologies from those currently informing planning thought. Much of her own research has been involved in exploring (with her PhD students) what these different starting points might be (both philosophical and practical) and how planning can re-conceptualise the urban socio-technical interface in global South and African contexts.



But re-theorising planning is unlikely to have sufficient impact on the impending urban crisis in Africa: other initiatives are necessary. Given the paucity of urban and policy research on the continent, Professor Watson formed part of the cross-faculty team that collaborated to establish the African Centre for Cities in 2007. The Centre has flourished and in 2013 will take the significant step of co-ordinating a meeting of the 16 most prominent urban-research centres on the continent, together with major donors, to collaboratively shape an urban research agenda for Africa.

A longer-term strategy has been to shift the nature of planning education at universities on the continent, given that many curricula are still strongly shaped by post-World War British planning ideas. Hence planning professionals are being produced who have little understanding of the real challenges of African urbanisation and are equipped only with planning ideas from a very different time and place. The ACC-

hosted Association of African Planning Schools (AAPS) has grown significantly, and this network of 50 urban planning schools is now a recognised influence on planning education and practice in Africa, and has generated significant educational research amongst its members.

One reason why it is hard to shift planning curricula is that national planning laws in many African countries were inherited from British (and French) colonial administrations and persist to the present day. This binds planning schools to producing planners trained to operate these outdated legal systems, but the planning laws themselves are also unable to recognise or respond to the current drivers of African urban change. It has therefore been necessary to initiate a research project aimed at revealing the weaknesses of this legislation across the continent and developing both processes and outcomes to bring about planning-law reform

Planning Education and the Association of African Planning Schools (AAPS)

AAPS is a peer-to-peer network of African university programmes that educate and train urban and regional planners.

Its 50 members are drawn from 19 countries, located in all regions of Africa (Botswana, Egypt, Ethiopia, Ghana, Kenya, Lesotho, Malawi, Morocco, Mozambique, Namibia, Nigeria, Rwanda, South Africa, Sudan, Tanzania, Togo, Uganda, Zambia and Zimbabwe). As a knowledge network, AAPS aims to facilitate exchange on curriculum development and research areas between members, primarily through digital communication and social networking tools. With generous funding from the Rockefeller Foundation since 2007, and with the enthusiastic help of researcher James Duminy and his colleague Dr Nancy Odendaal, AAPS has held workshops on key research themes and methods related to planning issues in African cities, has facilitated co-publishing, has developed educational 'toolkits' for new planning courses, and has recently developed a master's curriculum for the University of Lusaka's new planning programme.

Nothing changes the mind-set of students more profoundly than these direct engagements, which also equip them with the sensitivities needed to promote inclusive urban planning practices.

Particularly significant is the memorandum of understanding signed with Slum Dwellers International in 2010, committing planning schools to work with informal communities to expose their students to 'experiential' learning processes. Six studios have now been run on various parts of the continent, in which planning students work collaboratively with slum-dweller organisations on 'real-life' urban upgrade projects. Nothing changes the mind-set of students more profoundly than these direct engagements, which also equip them with the sensitivities needed to promote inclusive urban planning practices. The engagements have also stimulated research on planning pedagogy and how the education of planning professionals needs to respond to the particularities of the African urban context.

Building a Platform for Urban Legal Reform in Africa

Since 2010, and working through AAPS and the ACC, researchers have been building a policy argument for changing and improving urban laws in Africa and supporting a network of academics and practitioners contributing to these debates. The initiative is being led by Adjunct Associate Professor Stephen Berrisford, a land-law and planning expert with experience of planning-law reform in Africa.



The starting point for this research and lobby initiative is the belief that legal frameworks that govern urban development – especially urban planning, land and housing and urban governance – are outdated and inappropriate. Research has focused on identifying why it is so difficult to change planning law in Africa, leading to exploration of the entrenched nature of these laws, how power is derived from them, and how particular social groups tend to benefit from them. A journal special issue in 2011 was a first attempt to capture the experiences and difficulties of urban-law reform efforts in Africa.

The building of a platform to take forward urban-law reform in Africa has so far produced a major workshop of key political and international agency representatives, as well as a plenary dialogue at the 2012 World Urban Forum. Now, together with Cities Alliance, UN-Habitat, Urban LandMark and the World Bank, UCT researchers have initiated the process of compiling an *Urban Legal Guide*, a practical guide to support processes of urban legal reform in Sub-Saharan African countries.

URBAN ACET

Established as a collaborative research centre in 2008, the African Centre of Excellence for Studies in Public and Non-motorised Transport (ACET) is funded by the Volvo Research and Educational Foundations (VREF) under its Future Urban Transport programme.

It is part of an international network of ten VREF-funded centres all focusing on the development and implementation of future urban transport solutions. ACET comprises academics and postgraduate research students from three main partner universities: the Centre for Transport Studies at UCT, the Department of Transportation and Geotechnical Engineering at the University of Dar es Salaam, and the Institute for Development Studies at the University of Nairobi. This Centre of Excellence is the primary collaborative network for the university's Centre for Transport Studies.

The ACET research programme is focused on the two main areas of public transport and paratransit, and non-motorised transport. Paratransit is defined as an alternative, flexible mode of passenger transportation that does not follow fixed routes or schedules (such as the minibus taxis that dominate the Cape Town public-transportation scene).

African cities have experienced a decline in scheduled public transport, and the emergence of weakly regulated and unscheduled paratransit. A major challenge facing authorities is the transformation of these services into integrated, regulated, safer and more efficient systems. Many previous attempts to do this have been developed without sufficiently grounded knowledge of 'real world' business, operating and regulatory conditions, and of governance capacities.

African cities, fairly ubiquitously, have inadequate infrastructure to support the non-motorised transport (NMT) modes upon which large impoverished populations depend. Poor levels of NMT accessibility and unsafe and uncomfortable travel conditions are the inevitable results. For many decades NMT has been ignored or underestimated, and treated as an add-on or afterthought. Both these research areas are situated in a context of responsible government agencies with low capacities, limited resources and poorly developed planning frameworks.

The spectrum of the ACET research programme includes projects focused on travel behaviour patterns, road safety, paratransit operations and regulation, public transport system assessment, non-motorised travel and infrastructure, intelligent transport systems, travel behaviour change, school travel planning, and city restructuring.

ACET's objective is to produce and disseminate knowledge on the development and governance of public and non-motorised transport in African cities, and to serve as a hub of research and capacity-building. The Centre of Excellence aims to empower researchers in Africa to set their own research agendas and engage directly with the transport challenges they face. An overarching objective is to facilitate an increase in journal publication, and greater involvement of African researchers in international conferences and in other forms of scholar interaction.



Associate Professor Roger Behrens

Paratransit Operations and Regulation in Cape Town

Led by Associate Professor Roger Behrens and funded by the Volvo Research and Educational Foundations, this ongoing project explores appropriate policies with respect to urban public transport system reform.



Public transport systems in contemporary sub-Saharan African cities are heavily reliant upon paratransit services. These services are typically poorly regulated and operate as informal businesses. Common results of weak public sector regulation, and a fare strategy in which owners claim a fixed daily revenue target and drivers keep the balance as income, are destructive competition and poor quality of service. There is a strong case for improving the quality, reliability and coverage of public transport systems, and some city governments have attempted to do so by initiating reform projects that envisage the phased replacement of paratransit operations with formalised bus rapid transit systems. There are, however, path dependencies and institutional and financial constraints that limit the possible extent of reform. Paratransit operations also have some inherent advantages with respect to demand responsiveness and service innovation. Attempts to eradicate paratransit may therefore be neither pragmatic nor strategic. It is hypothesised that two future scenarios are likely: hybrid systems comprising

both paratransit and formally planned modes, and systems improved by upgrades and strengthened regulation of existing paratransit services.

Using information obtained from international case studies (e.g. Hong Kong, Jakarta, Recife, Santiago and Quito), the project is exploring appropriate regulatory frameworks for hybrid public transport systems in which formal and informal services coexist in a complementary manner. Drawing from engagement with minibus-taxi operators in Cape Town, the project is also uncovering the sources of paratransit resistance to the bus rapid transit (BRT) system implementation, and is developing an understanding of the heterogeneous nature of paratransit operator aspirations and the associated path dependencies these impose. The project researchers contend that policies that recognise paratransit, and seek contextually appropriate complementarity with formalised planned services, will produce greater benefits than policies that ignore their continued existence.

City Restructuring

This project focuses on exploring the potential to reduce the amount of motorised travel in the three main partner cities (Cape Town, Dar es Salaam and Nairobi) and investigating the impact of reduced commute distance travelled by workers.

Cities of the global South have relatively low car-ownership rates (between 18 [Kenya] and 144 [South Africa] vehicles/1,000 persons) compared to cities of the global North (between 400 and 700 vehicles/1,000 persons). The growing economies of the cities of the global South will translate into increased incomes and increased car-ownership rates. In parallel to this, the populations of these cities are also growing.

It might be argued that coal and nuclear power can be used to power electric public transport vehicles, but these resources are also limited.

These forces are likely to encourage the development of space economies and transport infrastructure suited to the motorcar. In contrast to this trend is the prospect of declining global fuel resources and increasing costs. This will reduce the number of persons and households that can afford to use a car to meet their transport needs. This will have a significant impact on the economies of cities and the well-being of their populations, more especially on those cities that have been structured to suit private motorised transport, and even more so on those that are poorer. (It might be argued that coal and nuclear power can be used to power electric public transport vehicles, but these resources are also limited. Oil, coal and nuclear power resources are forecast to peak in 2006, 2020 and 2040 respectively, resulting in serious shortages, and therefore very high costs, by 2025, 2070 and 2100 respectively).

The aim of this research is to estimate the positive and negative effects that would result from restricted private and even public motorised travel and the effect of informality in cities of the global South on these estimates. Project activities in 2012 focused on the administration of surveys in Cape Town to assess the consequences to employers and employees of restricting motorised commuter travel.

The project is led by Associate Professor Romano Del Mistro and funded by the Volvo Research and Educational Foundations.



Non-Motorised Travel and Infrastructure in Cape Town

This project focuses on the safety of non-motorised transport users (e.g. cyclists and pedestrians), and their interaction with other road users and infrastructure measures. Traditionally, road-safety assessments are conducted retrospectively.



The results of these investigations aggregate the causes of crashes under human, vehicular and environmental factors. The interaction between these factors is poorly understood, and safety counter-measures continue to be derived from historic crash statistics, or cluster analysis of incidents. Crashes are, however, random events and can occur anywhere and at any time. Historical crash-location patterns may not be the best indicator of future risks.

This project explores the use of microsimulation techniques to evaluate the relative safety of infrastructure and the interaction of road users through surrogate and proximal safety techniques, and contrasts the results with published findings. It also reviews road-safety assessment methods currently in use (e.g. traffic-conflict analysis and risk-assessment indices) and uses elements of these in conjunction with simulation to provide a sound basis for road-safety assessment. Test cases and analysis have been undertaken using some hazardous locations in Cape Town. Project activities in 2012 focused on completing the modelling work and initiating the write-up of results.

This project explores the use of microsimulation techniques to evaluate the relative safety of infrastructure and the interaction of road users through surrogate and proximal safety techniques, and contrasts the results with published findings.

The project is led by Associate Professor Marianne Vanderschuren and funded by the Volvo Research and Educational Foundations.

Signature Themes

associated with this theme



African Centre for Cities

Achieving well-governed and sustainable cities is becoming increasingly important to the future health of the planet. The African Centre for Cities partners closely with African universities and policy-making centres in order to provide an alternative perspective on dealing with critical urban issues. It provides an intellectual base and home for interdisciplinary, urban-related research at UCT, from which relations can be established with selected international think tanks, scholars, social movements, and funders.

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SARCHI Chair

associated with this theme

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Urban Policy

Professor Edgar Pieterse holds a PhD from the London School of Economics, a master's degree in Development Studies from the Institute of Social Studies (The Hague, the Netherlands) and BA-Honours from the University of the Western Cape. He is the holder of the SARCHI Chair in Urban Policy and directs the African Centre for Cities at the University of Cape Town. His research is wide-ranging, covering themes such as African urbanism, cultural planning, regional development, governance, and macro development issues. He is a founder member of the Isandla Institute, serves on the boards of Magnet Theatre, the Sustainability Institute, and the Cape Town Partnership. He regularly provides advisory services to international development agencies such as UN-Habitat, African Development Bank, the Development Bank of South Africa, the Organisation for Economic Co-operation and Development, and the UN Environment Programme. Recently, Professor Pieterse was asked to serve on an international advisory committee for Cooper-Hewitt, the National Design Museum curating an international exhibition, *Critical Mass: Design and Urbanization*.