



# 1 | Reflections on GCRO

Professor Adam Habib, one of the architects behind the establishment of GCRO and Deputy Vice Chancellor of the University of Johannesburg (UJ), will be joining the University of the Witwatersrand (Wits) as Vice Chancellor designate on 1 March 2013, and will take over as Vice Chancellor on 1 June 2013. Although Professor Habib will no longer serve on the GCRO Board, he will continue to take an interest in the institution and believes that it is crucial for UJ to remain involved. GCRO asked Professor Habib to reflect on some of the insights he gained from his five-year tenure on the Board.

## What was the motivation behind the establishment of GCRO?

“GCRO was established as a research centre to harness the intellectual energy of the universities in a way that can be applied to the advantage of the Gauteng City-Region. Universities are often criticised for being abstracted from the social reality and not having roots in their context. The essential mandate of the Observatory is to conduct research that speaks to the local context of the GCR, whether it is about health, or mining, or people’s lifestyles.

To be world class we need to conquer the local and then theorize our experiences. This will enable us to make a unique global contribution. We need, as Africans, to start speaking of our own experience, rather than imitating the foreign.”

## What are some of GCRO’s key accomplishments since its establishment in 2008?

“Founding an institution is a very exciting part of organisational life. As with all institutions, the establishment of GCRO was faced with hurdles, challenges and there were even moments of euphoria. Through this we all developed bonds of friendship, and relationships. It was an enormous learning experience, which has brought together a team of people who work across boundaries. It has made it possible for us to begin to bridge divides between UJ and Wits in ways that were not previously possible. It has also enabled us to develop a relationship with provincial government and feed into their thinking and it has allowed them to structure engagements with us. It took an incredible amount of energy from all partners.

GCRO has been fantastic from the perspective of developing a number of large databases, such as The State of the Gauteng City-Region and the OECD Territorial Review, which can be used by government to monitor performance and see how lifestyle indicators in the GCR have evolved over time.

In this sense, GCRO has directly influenced decision-making, and has also deliberately fed into the thinking of senior government officials.”

## What direction do you see GCRO needing to take in the phase after you leave?

“One of the things we often do not appreciate is how central the academy is to a developmental enterprise. Universities lie at the heart of the regeneration and re-imagination of cities



like Gothenburg or Pittsburg. In Gothenburg, the city council partnered with the university to bid for global academic conferences. The constant movement of intellectuals through the town not only created a vibrancy but also revitalised the tourism industry in that city. In South Africa, we tend to be unimaginative in thinking through the role of higher education and universities in our development agenda. GCRO, hosted in a university, could help to address this and rethink this role in profound ways.

My move from UJ as Deputy Vice Chancellor to Wits as Vice Chancellor creates scope for greater collaboration between the two universities. GCRO could also have a profound practical effect of bridging the gap between the two universities.

For instance, it seems natural to reconceptualise the urban space occupied by the two universities, which border with each other. By closing off the space occupied by the universities a free, safe academic community space could be created. A simple collaboration between the three partners could create a new possibility, which would benefit the city and the universities alike. There are simple ways in which we can collaborate that will enhance our efficiencies and operations.

GCRO’s research was initially largely quantitatively directed, focused on monitoring and assessment rather than being proactive. The role of the academy, however, should also be to rethink what is possible. GCRO should look at providing research that makes proactive recommendations around problems like acid water drainage, renewable energy, pollution control, dealing with shantytowns or transport networks.

GCRO’s resources are largely dependent on government. Increasingly, the institution needs to be thinking about restructuring its budget to ensure long-term financial sustainability. The current three-year budget cycle means that the organisation’s ability to offer long term and permanent contracts is inhibited, and this also limits the nature of its projects.”

## Will UJ remain active in the partnership?

“The Executive Director of UJ will sit on the GCRO Board until a new Deputy Vice Chancellor of Research has been appointed. It is an interesting time in the life of the GCRO Board. The first phase in the Board's life was to negotiate the institutional partnership and set up the infrastructure, architecture and human resources. That phase is now coming to an end, signified by the Provincial Government's signing of GCRO Constitution in December 2012.

During the second phase, the institution needs to look at where it should be going from here. We've done some

good research and engagement, and overcome some of the initial hurdles. In this context it is useful for UJ's new Deputy Vice-Chancellor to be joining the Board. Whilst institutional continuity is important for creating stability, it is important and institutionally revitalising to bring new energy, passion and ideas into an organisation. The academy is about ideas which require constant innovation and energy. The inclusion of new members on the board will assist in this regard and would be great for the revitalization of GCRO.”

## DATA

## 2 | Johannesburg among the least expensive cities

The latest GCRO data brief provides an interesting comparison of prices and earnings for Johannesburg against other major world cities

A comparative survey of prices and earnings, conducted by UBS across 72 world cities in 2012, ranked Johannesburg among the 16 least expensive cities. As a result, Johannesburg has the potential to attract and retain investment, professional staff as well as international holiday makers due to a relatively low price level, a mid-level wage index and high domestic purchasing power.

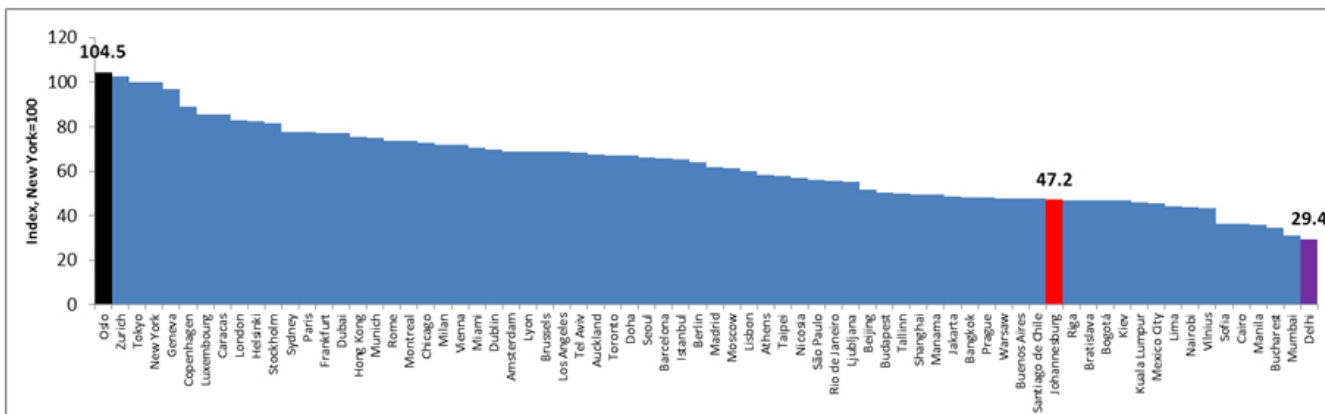
The wage index is certainly not among the worst and given a fairly high domestic purchasing power index, and comparatively low tax levels, Johannesburg can be viewed as one of the most affordable cities in the world. Johannesburg also offers very low working time required for basic foodstuffs such as bread. Lower cost of food has positive implications in terms of access to food especially among the poor. Wages for specialised professions such as engineers and financial analysts are also competitive for Johannesburg compared to many cities in Africa and Asia and even Europe. Further, the data shows that wages for unionised labour are quite low, contrary to claims by industry that government needs to put more wage controls in this area. However, wages for primary school teachers are among the lowest for Johannesburg and government

needs to seriously reconsider the issue of wages for school teachers if value is to be placed on education.

Although Johannesburg offers its residents a lower cost lifestyle relative to other cities in the UBS survey, there are disparities in earnings across the different occupational categories. This ensures that gross inequality continues to be perpetuated in Johannesburg. The magnitude of the increase in food and transport costs is also worrying and could worsen poverty and negatively affect mobility particularly among the poor and low-income residents. Large-scale changes in prices are also indicative of underlying failings within the economy. If Johannesburg is to maintain or improve on its current level of competitiveness, there is an urgent need to carefully monitor the economy so that prices of both goods and services are kept under control.

*GCRO Data Brief No. 3*, compiled by Darlington Mushongera, provides further details of the comparison of prices and earnings for Johannesburg against other major world cities. While the UBS data is stated for 'Johannesburg', the data can be safely used as a proxy for the Gauteng City-Region (GCR) on an international comparative scale.

### Index of prices including rent





## SUSTAINABILITY



## 3 | Roundtable on Johannesburg and its region: sustainable metropolis?

Key sustainability specialists from France and the GCR explore how urban structures and infrastructures can be transformed for greater resilience

On 7 – 8 November 2012, the University of the Witwatersrand, Johannesburg, in partnership with L'Agence Française de Développement (AFD), hosted a roundtable on *Johannesburg and its Region: Sustainable Metropolis?* The event joined key sustainability specialists from France with local counterparts to explore how urban structures and infrastructures can be transformed for greater resilience.

GCRO played a number of roles in the conference, working together with a team from the SARChI Chair in Development Planning and Modelling in the Wits School of Architecture and Planning. We helped conceptualize the themes for the event and compiled the detailed speakers' briefs. Graeme Gotz chaired a session that examined the 'material flows' that cities consume or produce, and how these flows can be measured in the interests of enhancing efficiency. GCRO's Josephine Musango presented her work on 'Understanding and measuring urban metabolism: the GCR perspective', outlining the conceptual frames we are using to collect and analyse data on flows of energy, water, waste, food and other materials into, through and out of the region.

The event saw various high-profile local and international participants. The keynote address was given by Minister in the Presidency, Trevor Manuel, and participants also heard inputs from the Deputy Minister of Public Works, Jeremy Cronin, the Executive Mayor of Johannesburg, Parks Tau, and the City Manager of Johannesburg, Trevor Fowler.

Speakers from France included Prof Serge Salat, founder and Director of the Urban Morphology Laboratory, Dr Jonathon Rutherford, a permanent state researcher at LATTS, the Ecole des Ponts ParisTech, and Prof Sabine Barles, professor of urban planning at Université Paris I Panthéon-Sorbonne. GCRO was especially pleased to share a platform with Sabine Barles, whose work we have followed closely in our *Metabolic flows & infrastructure transitions* project. She is one of the few researchers who has applied system dynamics

modelling to the city scale, conducting material flow analyses of both Paris and its surrounding region, the Île-de-France.

GCRO's contribution to the roundtable is an aspect of an evolving partnership with the SARChI Chair in Development Planning and Modelling on a large, multi-year project on Urban Resilience, funded by the national Department of Science and Technology (DST). In June 2011, Prof Phil Harrison and GCRO submitted a proposal to DST's Global Change, Society and Sustainability Research Programme (GCSSRP). In late 2011, we were informed that the proposal was successful, and a research grant of R5 481 600 awarded, with the total split over three years. The joint project, which has gathered momentum over the course of 2012, commits to conducting an urban resilience assessment for sustainable urban development in the Gauteng City-Region.

The project's primary output is envisaged as a set of tools and technologies by which to conduct urban resilience assessments, considering issues in five thematic focus areas: the governance of sustainability, the impact of urban form and fabric on sustainability, the 'greening' of infrastructure networks, the ecosystems service functions of green infrastructure, and the conditions for a green economy. Work on these tools and technologies for resilience assessment will be synthesized into an overall research report at the end of the three years. The project will also fund an edited book of academic pieces, bursaries for 5 MSc and 2 PhD dissertations, a set of journal articles from participating academics and a concluding colloquium. The roundtable co-funded with AFD is counted as one of the outputs from the project.

More details about the roundtable, and all the presentations presented at the event, can be downloaded from <http://bit.ly/afdwitsinfo> and <http://bit.ly/afdwitsppt>. The discussions will be published as a set of proceedings.





## 4 | Urban Age Electric City conference

An investigation into what it means to be urban; an interrogation of what is required for cities to thrive and flourish



In December 2012, the Urban Age Programme hosted its eleventh conference, Electric City, at the Shoreditch Electric Light Station in central London. Organized by the London School of Economics (LSE) Cities Programme and the Deutsche Bank's Alfred Herrhausen Society, and supported by the Mayor of London, the two day event set out to reflect on innovation in urban infrastructures and technologies as responses to growing environmental challenges. This is part of Urban Age's investigation into spatial and social dynamics within urban regions through the medium of mobile urban laboratories around the world.

The two day conference drew an impressive list of speakers tasked with debating what it means to be 'urban'. Speakers included Saskia Sassen (Columbia University), Ed Glaeser (Harvard University), Bruze Katz (Brookings Institute), Richard Sennet (LSE and NYU), Anthony Giddens (LSE), Edgar Pieterse (ACC UCT), Mark Swilling (Sustainability Institute) and Maarten Hajer (Netherlands Environment Agency), and various public and private sector representatives. The marked mix of academic and non-academic voices made for a diverse discussion on how people, resources, technology and infrastructure are assimilated into urban systems. Twelve intense back-to-back sessions debated the following:

- The dynamo of cities: density, technology and ideas
- A new climate for the urban economy?
- Innovating urban futures
- Continuity or disruptions: the impact of new urban technology
- Infrastructures for social progress: a global outlook

- Culture and innovation in the electric city
- Designing place for the digital age
- Implications for the public realm
- An urban response to climate change
- Governing the urban transformation
- The legacy of urban leadership

Electric City laid bare a series of interpretations about what technology, and infrastructure in particular, mean for different urban areas around the world. Yet it was the metaphorical association between the conference's title and the revolutionary role of electricity in transforming the urban landscape that unmasked a more profound conversation over the two days. This concerned what we know about complex political, economic, cultural and social dimensions that precede the normalization of new technologies, what it feels like to work through this process of change, and how we should engage therein. Without diluting the depth and scope of the powerful discussion set, the following emerged as key questions in an unfolding urban debate:

- How do citizens have a stake in future cities and urban regions?
- What are the benefits of urbanization?
- How can private actors, including banks and corporations, help urban investment and municipalities?
- How can we link the physical and social structures and life?
- How does finance work in relation to electric cities?
- What can politicians do about investing in resilient infrastructure?

At the intersection of these questions is an enquiry into the role of information, the variable ways information is organized in different urban areas and the implications thereof for how cities operate. As Richard Sennet reflected in his aptly themed discussion on *The Stupefying Smart City*, urbanites have at their disposal immense amounts of data, but how do we use this information, through what infrastructure, to take ownership of our lives and improve social life? Whether the conference then intentionally positioned the likes of Cisco, Eriksson, IBM and various consultancy firms such as Siemens and McKinsey, alongside key academics in the twelve discussion groups, is an interesting provocation in the realm of urban information dynamics. FABRICA CEO, Dan Hill, made a compelling remark, regarding whether urban dynamics, allied to the analytics of 'Big Data', and generated by a self-aware urban infrastructure, can be held in a productive tension to facilitate cooperative urban governance? The revealing guest appearance from David Cameron and Boris Johnson, confirmed the intimate liaisons between urban governments and the private sector. Cameron and Johnson utilized the Urban Age conference as a platform from which to launch the £50 million Silicon Roundabout, the largest civic space in Europe and collaboration between the City of London and corporations such as Microsoft, Cisco, IBM and KPMG.

The liaison between urban governments and major private sector companies, the latter offering turn-key solutions offered to the 'public' domain, is a striking representation of the actually emerging Electric City, its modes of governance and infrastructure.

It was perhaps the voice of the practicing 'public' officials from around the world, which presented the most compelling reflection on the complex citizen-government relationship that hinges on decision-making processes often predisposed to certain *modus operandi*. The experiences of Anthony Williams (former mayor of Washington), Carl Cederschiöld (Representative of the Mayor of Stockholm) and Enrique Peñalosa (Columbian Politician and urban strategist) in implementing urban strategies reminded us of the opaque contours between jargon – whether cities aim to be 'electric' or 'smart' or 'sustainable' – and real, transformative change.

Our encounter with the metaphorical Electric City is therefore an investigation into what it means to be urban today and tomorrow, but probably more pressing, what it means for cities to thrive and flourish. Surely this is what we need to ask if we are to create new knowledge about urbanism?

## DATA

## 5 | Smarter cities at a city-regional scale?

It's time to rethink the 21<sup>st</sup> century as the century of cities

According to IBM, it is time to rethink the 21<sup>st</sup> century as the century of cities. This message was clearly evident when GCRO recently attended the IBM Smarter Cities Challenge Summit held in Palisades, New York, from 13-15 November 2012. The summit brought together various cities that have either previously worked with IBM, following a smart cities award, or were about to embark on a smarter cities project. As part of the Smarter Cities Challenge, IBM dedicates 6 IBM staff to work with the selected city on a critical challenge/problem for a period of 3 weeks. The event was well attended with a number of mayors from around the world, including South African representation with the Mayor and City Manager from Tshwane, and City Manager from the City of Johannesburg. Various presentations and discussions were held around ways in which cities can become smarter and more efficient, enabling smart citizens.

One of the key themes that I picked up at the summit was smarter ways of using and sharing information across cities and regions, such as:

- 1) **Data analytics of static data.** Cities have a lot of data that could be analysed and the results used to identify

trends and improve efficiencies, monitoring, planning, and in some cases, even perform predicative capabilities, using "sense-making software".

- 2) **Data analytics of real time data.** As more real time data becomes available, it should be utilised to assist with providing up to the minute information for pro-active decision making. Examples include scanning digital video footage for anomalies to identify possible crime incidents before they occur.
- 3) **Integrating data across departments.** There were discussions around new models of collaborative leadership and thinking systematically across departments. All available data is required to make the best planning decisions. For example, the City of Rio has developed a [\*city operations centre\*](#) that integrates data from 30 different agencies (a system of systems) including city, state and private utilities. According to a [\*NY Times report\*](#): 'the mayor wanted to knock down silos among his departments and combine each one's data to help the whole enterprise. "We used to have all of this information." Mr Paes said. "But we could not put it together to use in a smart, intelligent way"'.



4) **Open data.** Not only should cities be making data available but figuring out what data to make available and how best people can use the data. This includes a shift to the mobile environment where public city information systems should be primarily developed for the mobile phone or tablet.

5) **New innovations within cities.** There was a big push from cities to encourage innovation within government and implement new smarter solutions:

- To track the occurrence of asthma in the city of Louisville in the US, GPS devices were fitted to asthma pumps so that a coordinate is captured every time the user experiences an asthma attack (which could be as a result of pollution) and uses the pump, thereby mapping possible pollution hot spots.

### IBM Smarter Cities Challenge Summit, Palisades conference centre, New York



### IBM Watson computer



- The city of Istanbul are partnering with mobile phone service providers to use mobile phone usage data to track traffic congestion (instead of traditional transport surveys) and improve public transportation as part of the Insights in Motion project.
- Boston has set up an *office of new urban mechanics* – “an approach to civic innovation focused on delivering transformative city services to Boston’s residents”. An example of this initiative is an iPhone app called StreetBump that citizens can download to track the smoothness of the user’s ride along the roads and provide real-time information to assist the city identify problems with its roads.

A visit to the T.J. Watson IBM research centre in Yorktown was a fantastic way to round off the trip. The highlight was a review of the *Watson Deep QA* programme and site visit to the famous IBM supercomputer that took on and beat the Jeopardy game show, and is now being applied in healthcare to improve diagnosis and treatment, and in the financial sector to improve investment decisions and customer satisfaction.

The summit obviously had a city focus, but all the problems discussed were applicable on a city-region scale. To cope with the continued urbanisation trend, cities and city-regions have to become smarter and more efficient, not only investing in new infrastructure, but optimising existing assets. City systems need to be built (or rebuilt) to cater for today’s problems. The *G2055* planning process currently underway and the possible establishment of the IBM Skills Development and Research Institute at Wits, provide an ideal opportunity to embed smarter city concepts and research within long-term planning in the GCR.

For further enquiries, contact Chris Wray at [chris.wray@gcro.ac.za](mailto:chris.wray@gcro.ac.za)

GCRO is launching an exciting photographic competition to capture staff and students' perceptions of the GCR

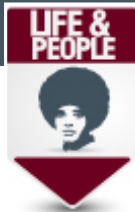


To kick off the new year, GCRO in partnership with the UJ FADA gallery, will be launching an exciting photographic competition open to all students and staff members at universities, universities of technology, FET colleges and other tertiary institutions within the Gauteng City-Region. Students and staff are invited to submit photographs depicting their perceptions of the GCR and what it means to them. The photos can reflect any themes involving life and people, space and how we traverse and move around in it, trade and economies at different scales, how we use/deplete or sustain resources, and thoughts on government and governance. The photographs will also be used to illustrate the work and research of GCRO.

The photo competition officially opens in mid-February 2013 and photographs must be taken within the GCR. Entrants stand a chance to win a new Canon DSLR camera and cash prizes, all to the value of R15 000. Entries may be submitted until the 18th of March 2013, with selected photos to be exhibited in April/May 2013.

For more details and information on how to enter, visit [www.gcro.ac.za/photocompetition](http://www.gcro.ac.za/photocompetition) or contact Potsiso Phasha at [potsiso.phasha@gcro.ac.za](mailto:potsiso.phasha@gcro.ac.za) or 011 717 7280.





## 7 | GCRO represented at Floodrisk2012

GCRO's work on flood vulnerability and resilience in the GCR sparks interest

Entitled 'Science, Policy and Practice: Closing the Gap' and covering topics such as river and estuary flooding and climate change, the [FloodRisk2012 Conference](#) took place in Rotterdam (Netherlands) during November 2012. Some of the key research topics emerging from the conference, applicable to the GCR, included: a focus on societal resilience and vulnerability, assessment of economic damage, integrated risk management planning during development planning processes, and improved governance and the strengthening of policy instruments and regulation measures to reduce risk. Clearly disaster risk cannot be entirely avoided, especially in densely populated urban areas worldwide, but it is the level of acceptable or planned-for risk that becomes a key concern. A large number of the conference papers, therefore, focussed on the methods of modelling, analysis and the visualisation of the various levels of acceptable risk through the use of GIS.

One of the striking insights of the conference were the multitude of similarities that exist between developed countries, especially in Europe, versus developing countries – notably the GCR experience in regards to general policy and decision making issues. GCRO's work on flood vulnerability and resilience in the GCR, presented by Maryna Storie, sparked interest with the European delegates in terms of the high level of social and

stakeholder engagement in projects. European disaster risk protection measures are often a government-driven process with minimal public engagement. An example of flood management policies and governance was identified as being similar to the Acid Mine Drainage debate in the GCR, whereby flood hazards for a specific river had to be mitigated and decisions made to protect residents from flooding. Permits were granted under pressure to comply with project constraints (van Herk, 2012), with the river change permits granted by the same governing body proposing the changes. Inclusive public participation processes and the need for transparent decision making at government level, as well as a continued need for more integrated implementation across government spheres, continue to emerge as a challenge across countries with different levels of economic development.



### Flatlands flooded in the Netherlands



# NEWS

## Reports and publications

- Nyar, A. & Wray, C. (2012) 'Understanding protest action: some data collection challenges for South Africa', *Transformation*, 80, pp. 22-43.
- Storie, J.M. & Ngie, A. (2012), 'Potential for urban transformation through the utilisation of stormwater infrastructure: Considerations from the Gauteng City-Region', in *Comprehensive Flood Risk Management: Research for Policy and Practice*. Editors: Klijn, F. & Schweckendiek, T. CRC Press, Taylor & Francis.
- Jennings, R. (2012), *Survey of surveys: A survey of citizen-based surveys conducted by provincial and local government in Gauteng*. GCRO Occasional Paper No. 3.

at the 1st National Conference on Global Change held at the Birchwood Conference Centre, 26-28 November 2012.

- Graeme Gotz and Chris Wray presented 'Demographic modelling and the implications of the results from census' and 'Modelling urban spatial change: a preliminary review of South African Initiatives' respectively, at a joint workshop on *Spatial and demographic modelling for G2055*, arranged by GCRO and Gauteng Planning Commission in late November 2012.

## Conferences, workshops and presentations

- Alexis Schaffler participated in the invite-only *Electric City* conference, the eleventh annual conference of the Urban Age conference series, held in London, UK, from 6-7 December 2012.
- Chris Wray attended the *IBM Smarter Cities Challenge Summit* held in Palisades, New York, from 13-15 November 2012.
- Maryna Storie presented her paper entitled 'Potential for urban transformation through the utilisation of stormwater infrastructure' at the *FloodRisk2012* conference in Rotterdam, Netherlands, in November 2012.
- Maryna also presented GCRO's research to the Faculty of Geo-information Science and Earth Observation (ITC) of the University of Twente in Enschede (Netherlands), as well as to the Leibniz Institute of Ecological Urban and Regional Development (IOER), in Dresden (Germany) during late November 2012.
- Josephine Musango presented at the *Sustainability in Johannesburg and its wider metropolitan region* roundtable, held from 7-8 November 2012, on her research 'Understanding and measuring urban metabolism: the GCR perspective'.
- Josephine also presented 'Modelling green economy'

## Teaching & supervision & wider academic citizenship

- Chris Wray was an external examiner for a Wits fourth year Electrical and Information Engineering student project (supervised by Prof Rex van Olst) which investigated whether transport infrastructure is serving urban growth in Johannesburg.
- Alexis Schäffler supervised Mduduzi Nhlozi, whose Masters' thesis '*Towards a Sustainable Green Space System: Understanding the Planning and Management Dynamics in the City of Johannesburg*' received a B.
- All existing supervision by GCRO staff will continue in 2013 and is not repeated.


  
Gauteng City-Region Observatory

- ▶ Tel +27 11 717 7280
- ▶ Fax +27 11 717 7281
- ▶ Email: [info@gcro.ac.za](mailto:info@gcro.ac.za)
- ▶ [www.gcro.ac.za](http://www.gcro.ac.za)