

**Urban Design Climate Workshop – Durban**  
16-22 February 2019  
**Programme**



**Urban Design Climate Workshop**  
*Durban: Capacity Building & Best Practice Prototypes*

The Urban Climate Change Research Network (UCCRN – [www.uccrn.org](http://www.uccrn.org)) proposes a multi-city, district-level Urban Design Climate Workshop (UDCW) Program. The UCCRN Urban Design Climate Workshop sessions will allow representatives from Durban to integrate and scale up mitigation and adaptation principles by reducing energy consumption in the built environment, strengthening urban climate resilience, and enhancing human comfort and quality of life. Through the participatory engagement of the City Teams, the Climate Workshop will demonstrate that through energy-efficient urban planning and urban design, compact urban districts can work synergistically with high-performance construction and landscape configuration to create interconnected, protective, and attractive urban areas that promote mitigation, adaptation, resilience, and transformation.

The Isipingo district of Durban, South Africa will be the focus of the UDL sessions, with teams of participants (i.e. City Teams) drawn from city governments as well as relevant stakeholders within cities. The Program Outcome envisions participating City Teams interacting and learning from each other's experiences implementing climate change programs and initiatives, using the existing Local Area Plan and isiPhingo Urban Design Framework as the status quo and best case scenarios. The goal of the sessions will be to facilitate implementation and planning across line functions within the city, through the Durban Climate Change Strategy Technical Task Team<sup>1</sup>, by developing implementation actions. These actions together take into account varied governmental, developmental, socio-economic, and ecological conditions while simultaneously developing perspectives on taking engagement and implementation efforts to the next level. A further goal is to rapidly build capacity across multiple stakeholder groups, including indigenous populations to implement mitigation, adaptation, resilience, and transformation actions to respond to climate change. A UDL report will be produced to provide input to climate change guidelines for the IsiPhingo Urban Regeneration Project.

The Urban Design Climate Workshop is based on the *Second Assessment Report on Climate Change and Cities* (ARC3.2), published by Cambridge University Press, which was released at the IPCC Cities and Climate Change Conference, March 5-7, 2018. The Urban Planning and Urban Design Chapter contends that confronting the challenges of a rapidly urbanizing world threatened by climate change requires expanding on the traditional influence and capabilities of urban planning and urban design. Evidence-based ARC3.2 strategies demonstrate how integrating climate science, natural systems, and compact urban form will configure dynamic, desirable and healthy communities.

The isiPhingo UDCW will be run from 18 – 20<sup>th</sup> February 2019. A baseline of current conditions, as captured in the isiPhingo Local Area Plan, will be compared with future climate and development scenarios, as outlined in the isiPhingo Urban Design Framework. Climatic impacts include urban heat islands and flooding in 2050 under a business as usual (BAU) development scenario, including an estimate of worst case climate condition and best practice. The

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<sup>1</sup> The DCCS TTT is part of the governance framework of the City. The TTT is a committee of senior City administrative leaders who meet monthly to drive implementation of the DCCS, and to coordinate climate change action across line functions. The Chair of the DCCS TTT, Mr Musa Mbhele, reports to the eThekweni Municipality Climate Change Committee on a quarterly basis.

following three scenarios are presented: baseline 2019, baseline 2050 (BAU) and 2050 best practice. A further activity is zeroing in on key development activities to interrogate climate impacts at a granular level. These three sites will include proposed attenuation facilities outside of the isiPhingo CBB (including the container depot near the R102 / N2, amongst others), the proposed automotive industry location and informal trading locations.

Actions during the three days of the UDCW will include a site inspection (first morning), followed by a stakeholder engagement workshop with representatives of external stakeholder groups invited to participate along with city officials engaged in the isiPhingo Regeneration Project. This will be followed by a working day of the UCCRN and city team, and the third day will be a second workshop highlighting suggestions and guidance for the isiPhingo Urban Design Framework. The workshop will be followed by a half day spatial planning training workshop for city and local university planners. A report, with specific actions and guidance in respect of implementation of the isiPhingo Rehabilitation Project, will be developed following the UDCW and tabled at the DCCS TTT for implementation.

The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is sincerely thanked for their gracious support through the Cities Fit for Climate Change programme, as is the Urban Climate Change Research Network for their technical expert support leading the UDCW.

**Draft Programme:**

**Programme: isiPhingo UCCRN/ DAC UDCW**

Session	Name	Details
<b>Day 1: isiPhingo UDCW site visit and stakeholder engagement session; Lotus Park Community Hall (see Appendix 2 for directions)</b>		
08h00 – 11h00	isiPhingo site visit	<ul style="list-style-type: none"> <li>• IsiPhingo project presentation at Lotus Park</li> <li>• Site visit with UCCRN and isiPhingo teams</li> </ul>
12h30 – 13h30	Lunch	<ul style="list-style-type: none"> <li>• Includes stakeholder registration</li> </ul>
13h30 – 15h30	UDCW Stakeholder Engagement	<ul style="list-style-type: none"> <li>• 13h30 - Welcome and introduction (Head: DPEM)</li> <li>• 13h40 - Overview of UDCW process: objectives and outcomes (N. Zama)</li> <li>• 13h50 - UCCRN overview (J. Raven)</li> <li>• 14h00 - Stakeholder engagement session 1 (M. Leone, C. Braneon, E. Tersigni)</li> <li>• 14h45 – comfort break (refreshments)</li> <li>• 15h00 – Stakeholder engagement session 2 (M. Leone, C. Braneon, E. Tersigni)</li> <li>• 16h00 – wrap up and closing (Head: DPEM)</li> </ul>
16h30 – 17h30	Debriefing and note making	<ul style="list-style-type: none"> <li>• Prepare all notes for next day feedback (J. Raven, M. Leone, C. Braneon, M. Esposito, E. Tersigni)</li> </ul>
18h00 – 21h00	Welcome supper event	<ul style="list-style-type: none"> <li>• Hosted by Chairs EMCCC and TTT</li> </ul>
<b>Day 2: isiPhingo UDCW Internal working session; Go! Durban offices</b>		
08h00 – 08h30	Welcome and Introductions	<ul style="list-style-type: none"> <li>• Purpose of day (J. Raven, M. Leone)</li> </ul>
08h30 – 09h00	Review of Day 1	<ul style="list-style-type: none"> <li>• Highlights of Day 1 site visit and stakeholder engagement (SOD)</li> </ul>
09h00 – 09h30	Introduction to day’s work	<ul style="list-style-type: none"> <li>• Outline of concepts, processes, etc. (DPEM)</li> </ul>
09h30 – 12h00	Working session 1	<ul style="list-style-type: none"> <li>• Presentation of UCCRN analysis, macro scale simulations, micro simulations run, gaps in analysis (C. Braneon, J. Raven, M. Leone)</li> </ul>
12h00 – 13h00	Lunch	

13h00 – 16h00	Working session 2	<ul style="list-style-type: none"> <li>Co-design session to enhance Urban Design Framework, scenario development; plugging gaps in analysis (J. Raven, M. Leone, M. Esposito, E. Tersigni)</li> </ul>
16h00 – 17h00	Wrap up and preparation for Day 3	<ul style="list-style-type: none"> <li>Prepare key messages/ scenarios, ppt (J. Raven, M. Leone, C. Braneon, M. Esposito, E. Tersigni)</li> </ul>
<b>Day 3: isiPhingo UDCW Stakeholder feedback session; SAPREF Clubhouse (see Appendix 2 for directions)</b>		
09h00 – 09h10	Welcome and Introduction	<ul style="list-style-type: none"> <li>Welcome address (Head DPEM)</li> </ul>
09h10 – 12h00	Stakeholder feedback session	<ul style="list-style-type: none"> <li>Recap of Days 1 and 2: Summary of issues raised and recap of UDCW process,</li> <li>Walk through of maps,</li> <li>Q&amp;A</li> </ul>
12h00 – 12h30	Wrap up plenary	<ul style="list-style-type: none"> <li>Way forward: report development, actions to be taken (IPT)</li> <li>Vote of thanks (SOD)</li> <li>Closing (Head DPEM)</li> </ul>
18h00 – 21h00	Dinner	<ul style="list-style-type: none"> <li>GIZ South Africa and the global projects in Durban - with the presence of Councillor Mdladla and J. Goeske (GIZ)</li> </ul>
<b>Day 4: Masterclass with Spatial Planners and Land Use Management units; Architecture Department and Engineering Unit - eThekweni Municipality; Go! Durban offices</b>		
09h00 – 09h30	Introduction to day's work	<ul style="list-style-type: none"> <li>Outline of concepts, processes etc. (M. Leone)</li> </ul>
09h30 – 12h00	Working session 1	<ul style="list-style-type: none"> <li>Lessons learned from UCCRN Durban UDCW (E. Tersigni)</li> </ul>
12h00 – 13h00	Lunch	<ul style="list-style-type: none"> <li></li> </ul>
13h00 – 16h00	Working session 2	<ul style="list-style-type: none"> <li>Feedback session with attendees (M. Leone, E. Tersigni)</li> </ul>
16h00 – 17h00	Wrap up	<ul style="list-style-type: none"> <li>Conclusions and potential follow-up (M. Leone, DPEM)</li> </ul>
<b>Day 5: Preparation of Durban UDCW deliverables and follow-up workshop; Go! Durban offices</b>		
08h00 – 08h30	Welcome and Introductions	<ul style="list-style-type: none"> <li>Purpose of day (Z. Abdul)</li> </ul>
08h30 – 10h00	Debriefing and reporting	<ul style="list-style-type: none"> <li>Preparation of Durban UDCW final report (Z. Abdul, M. Leone, E. Tersigni)</li> </ul>
10h00 – 12h00	Workshop follow-up	<ul style="list-style-type: none"> <li>Synergies between Durban UDCW and Cities Fit for Climate Change - CFCC capacity building workshop (March 2019)</li> </ul>
12h00 – 13h00	Lunch	<ul style="list-style-type: none"> <li></li> </ul>
13h00 – 15h00	Wrap-up and conclusions	<ul style="list-style-type: none"> <li>Coordination of follow-up activities between DPEM, UCCRN and CFCC; working schedule and next follow-up virtual meetings</li> </ul>

#### Participants:

**UCCRN team:** Jeffrey Raven (lead), Christian Braneon, Mattia Leone, Luciana Godinho, Michael Esposito, Enza Tersigni  
**isiPhingo Regeneration Project team** including the following eThekweni line functions (amongst others): Development Planning, Development Management, Environmental Planning and Climate Protection Department and Coastal, Stormwater and Catchment Management.

## Appendix 1: City of Durban Urban Design Climate Workshop Proposed Workshop Schedule

### Workshop Participants

Durban practitioners, policymakers, stakeholders

Urban Planning and Urban Design students from Durban / Urban Design graduate students from NYIT (remotely)

UCCRN Urban Design Climate Workshop Team (in-person and remote)

### Pre-Climate Workshop Preparation

Geographic Information Systems (ArcGIS) will be developed and used to test district-wide concepts linked to sets of data, assembled before the UDL session through interactions with the City Teams. Parametric 3-D modeling tools will be used to refine morphological approaches to climate and sustainability outcomes through 3-D modeling and parametric design. Climate Analysis Mapping will be provided, including downscaled or 'right'-scaled climate projections that include

- Land Surface Temperature (LST) maps derived from satellite data.
- Spatially downscaled Global Climate Model (GCM) projections
  - The NASA Earth Exchange Global Daily Downscaled Projections (NEX-GDDP) dataset will be utilized which includes downscaled projections for RCP 4.5 and RCP 8.5 from 21 models and scenarios for which daily scenarios were produced. Each of the climate projections includes daily maximum temperature, minimum temperature, and precipitation for the periods from 1950 through 2100. The spatial resolution of the dataset is 0.25 degrees (~25 km x 25 km).
    - Extreme Heat
    - Precipitation

### Climate Workshop Schedule

#### Phase 1: Climate Analysis Mapping

- Focus challenges, groups, and districts
- Urban climate risk factors
- Climate maps – urban scale and local scale
- Initial planning/charette process

#### Phase 2: Planning and Design Interventions

- Open space planning, urban ventilation, others
- Construction materials
- Green infrastructure
- Phasing: Short-term; long-term
- Policies: Zoning, regulations
- Co-benefits: Public health; economic development, heritage/culture, youth/education

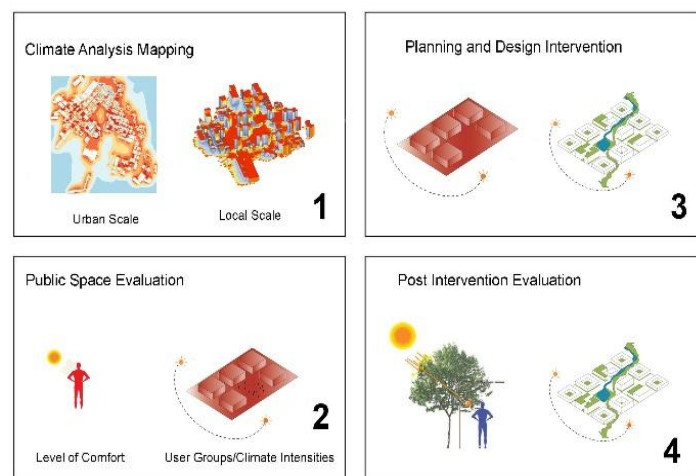
#### Phase 3: Public Engagement Session

- Present Climate Workshop Intervention Strategies in Green Space
- Community engagement
- Gather Feedback

#### Phase 4: Wrap Up and Way Forward

- Evolve Strategies based on public feedback
- Characterize barriers and bridges
- Plan next steps, including report with graphics

### Urban Climate Planning and Design



The Urban Climate Change Research Network (UCCRN) is a consortium of over 800 individuals dedicated to the analysis of climate change mitigation and adaptation from an urban perspective. UCCRN members are scholars and experts from universities and research organizations. They span a broad range of expertise including climate scientists; urban heat island and air quality experts; climate change impact scientists; social scientists, including political scientists, planners, and economists; and urban designers and planners.

### **UCCRN Urban Design Climate Workshop Team**

#### ***In-Person Facilitation***

**Jeffrey Raven, FAIA, LEED BD+C:** Associate Professor, New York Institute of Technology (NYIT); Director of Graduate Program in Urban & Regional Design; Principal of RAVEN Architecture and Urban Design LLC.

**Christian Braneon, PhD:** Remote Sensing Specialist, Goddard Institute for Space Studies

**Mattia Leone, PhD:** Assistant Professor, Department of Architecture - PLINIVS Study Centre, University of Naples Federico II, Italy

**Michael Esposito:** Building Scientist, Atelier Ten. Adjunct Instructor, New York Institute of Technology.

**Luciana Barreto Nogueira Godinho:** Graduate Assistant, Urban Designer, New York Institute of Technology

**Enza Tersigni:** Researcher in Technological and Environmental Design, Department of Architecture, University of Naples Federico II, Italy

#### ***NYC-Based Team***

**Daniel Bader:** Program Manager, Center for Climate Systems Research, Columbia University

#### ***Naples-Based Team***

**Giovanni Nocerino:** PhD Student in Building Technology and Environmental Design, University of Naples Federico II, Italy

### **Durban Stakeholder Contributions**

- 3D building massing CAD dataset, with elevation
- LiDAR
- Rainfall and stream flow data
- Oblique images
- GIS layers

### **Post-Climate Workshop Deliverables from UCCRN Team**

- Resilient Design Strategies
- Urban Planning Strategies

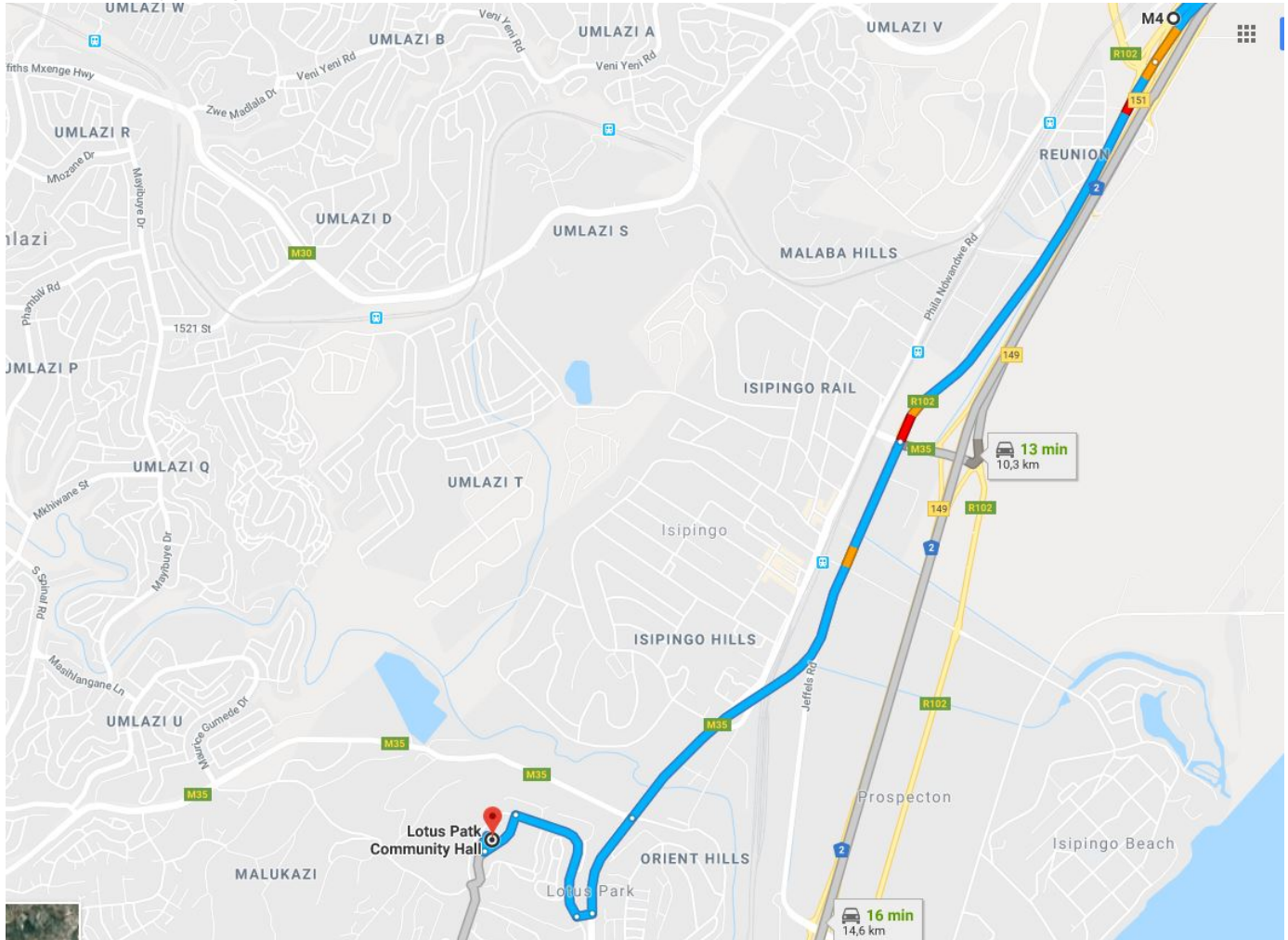
### **Joint Deliverable (Durban Stakeholders & UCCRN Team)**

- Final Report

## Appendix 2:

### Directions to Lotus Park Community Hall (4 Araucaria Place)

Take m4 south from city centre and join n2 south take Prospecton Road off-ramp (r102). Turn right and turn left into M35 south. Follow M35 turn right into Lotus Drive, turn left into Cocos avenue and turn right into Araucaria Place. The hall is on your right hand side.



### Directions to SAPREF Clubhouse (1 Refinery Road)

Head south onto Southern Freeway. Take the N2 at that point near old Durban Airport. Take the off-ramp at Prospecton / Isipingo. Proceed Left into Prospecton Rd. Keep left & take the next turn left to East Avenue. Keep left and take the next turn into Refinery Rd. Proceed for another 1.5kms. SAPREF Club House is on the left. Enter on your left through the gate with the mesh fence.

