City Centre Sustainable Housing Design Competition

Workshop 1: Why a City Centre Housing Design Competition?

Date: 20 March 2024
Time: 16:00-18:00
Venue: Online hosted by the CIB

Presenter: Jeremy Gibberd

City Centre Sustainable Housing Competition

Who?

Why?

Where?

How?

Who?

Organiser
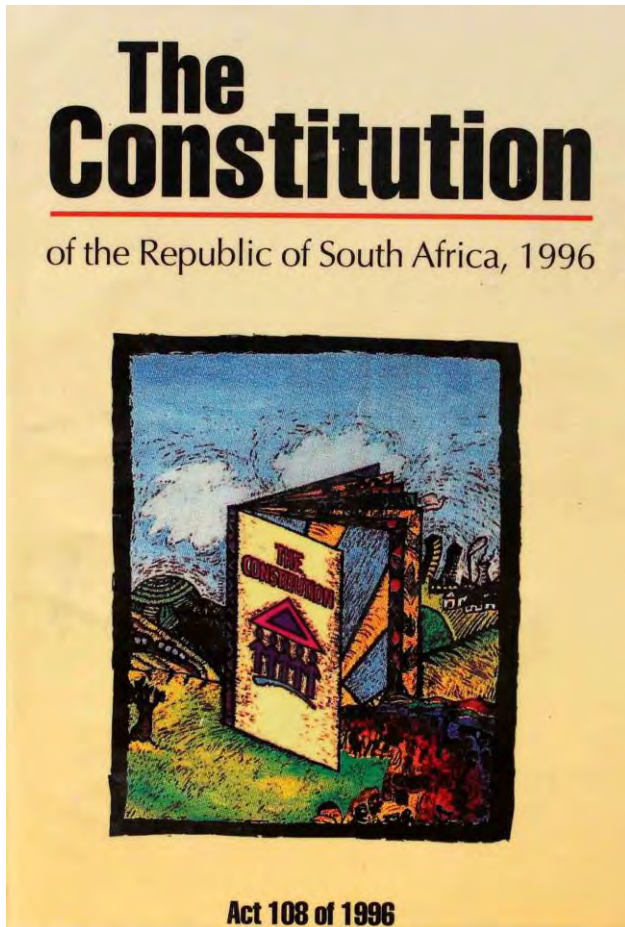
- CIB

Sponsors

- NHBRC

- Boogertman and Partners

Judges

- Department of Human Settlements

- NHBRC

- Boogertman and Partners

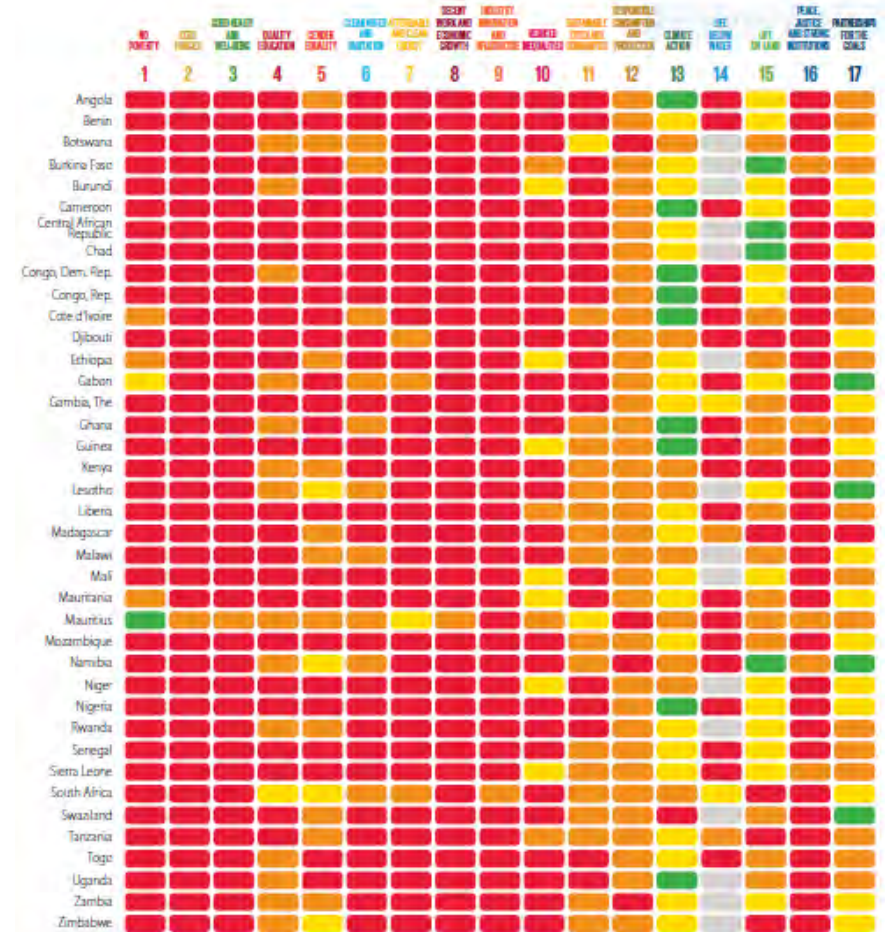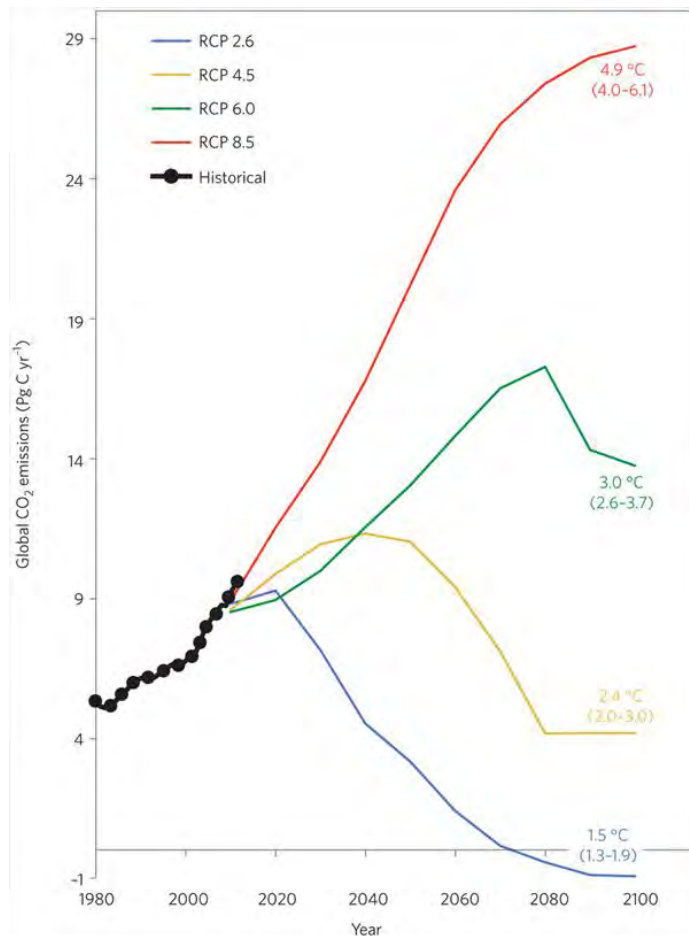- CSIR

- PIA

Organising team

- Francine, Prof Mbanga, Isaac, Busi, Theo, PD, Jeremy, Others

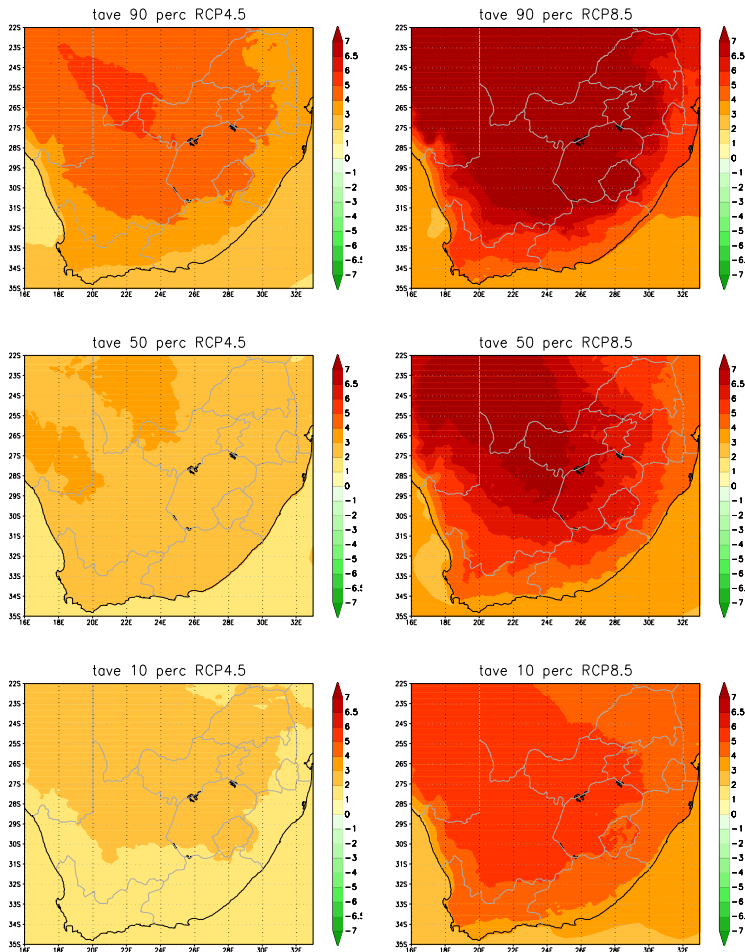# Constitution: How do we fulfil the right to housing?

- Equality
- Freedom of religion, belief and opinion
- Environment
- Housing
- Education
- Health
- Children have a right to basic nutrition, shelter, basic health care services and social services
- Sets out key objectives and principles that government legislation and programmes must fulfil (Department of Justice, 1996).

Climate change and SDG targets: How can human settlements be designed to achieve these?

Climate change: How can housing adapt for climate change?

tave 90 perc RCP4.5   tave 90 perc RCP8.5

tave 50 perc RCP4.5   tave 50 perc RCP8.5

tave 10 perc RCP4.5   tave 10 perc RCP8.5

- Increasing average temperatures
- More very hot days, (days over 35°C) especially in N Cape and Limpopo
- Increasingly erratic and extreme weather events and storms
- Increasing occurrence of water scarcity, drought and fires
- Increasing occurrence of very heavy rain, flooding, landslides
- Disruptions to supply chain food, water, power

New White Paper on Human Settlements: What does this mean for housing?

- Spatial planning
- New models of delivery
- Informal upgrading
- Affordable rental housing
- Contribution to the economy
- Climate change
- Capacity development
- https://www.dhs.gov.za/

Government housing programmes: How can these be developed?

- Variety of schemes
- Housing on the outskirts of cities, limited social infrastructure, public transport, employment, construction
- Inner city, social housing
- Upgrading of hostels
- Self-build schemes

Private sector housing: How can this be developed?

- Security estates to the periphery of cities, limited social infrastructure, public transport, reliance on car, access highly controlled, codes of behaviour.
- Townhouse development
- Mixed use

https://www.tsebo.com/valdevie_thorburn/

Informal settlements: How can these be developed?

- Located for economic opportunities, public transport, and affordability

- No security of tenure

- Poorly serviced for water, sanitation, electricity, schools, clinics

- Informal dwellings susceptible to heat, cold, and flooding

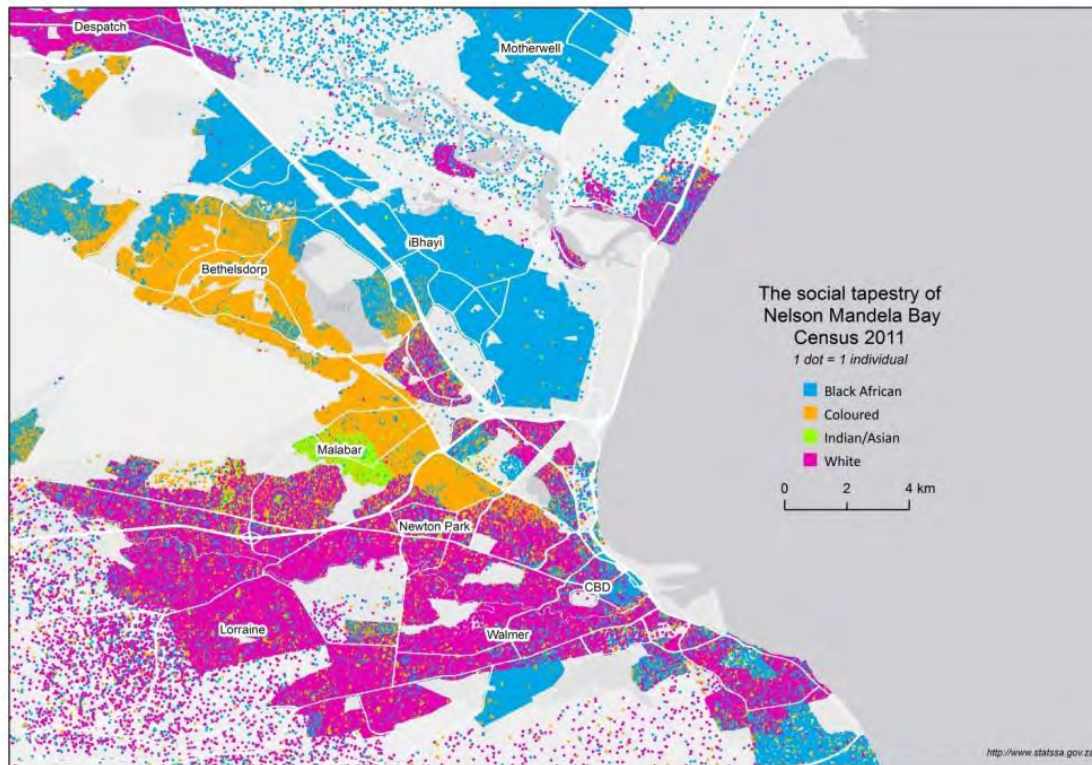# Inner cities: How can these be developed?

Authorities say Thursday's fire spread quickly though the structure because of combustible materials used in makeshift shacks inside the building. *(Reuters Image: @odirileram)*

- Private and public sector offices move out
- Urban decay
- Hi-jacked buildings
- Poor urban management
- Crime
- Fire
- Lack of maintenance

Integration: How are more cohesive and inclusive human settlements developed?

The social tapestry of
Nelson Mandela Bay
Census 2011
1 dot = 1 individual

- Black African
- Coloured
- Indian/Asian
- White

0   2   4 km

http://www.statssa.gov.za

- Highly segregated
- The central business districts (CBDs) have a high percentage of black African residents.
- CBDs are surrounded by suburbs that have a high percentage of white residents.
- High-density townships – dominated by black African, coloured or Indian/Asian residents – are disconnected from the CBD.
- Racial mixing seems to be occurring mostly in previously white-dominated neighbourhoods. (Statssa)

City form: How can housing contribute to more efficient urban form?
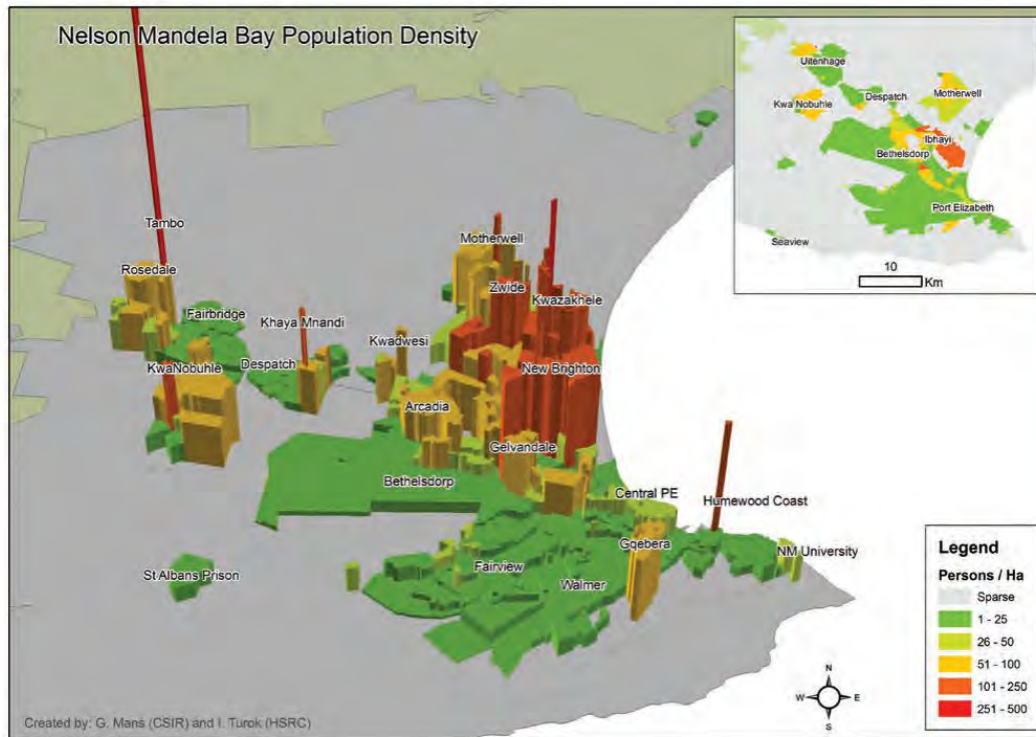
Figure 3.13 Population density of Nelson Mandela Bay

- Not coherent form, settlements a long way from centres, city centre has low residential density

- Considerable scope for redevelopment and infill.

- Bring people closer to economic activity and increase the population catchment of the city centre, increasing the demand for its facilities (Sacities, 2004).

Affordability: How do we develop affordable housing?
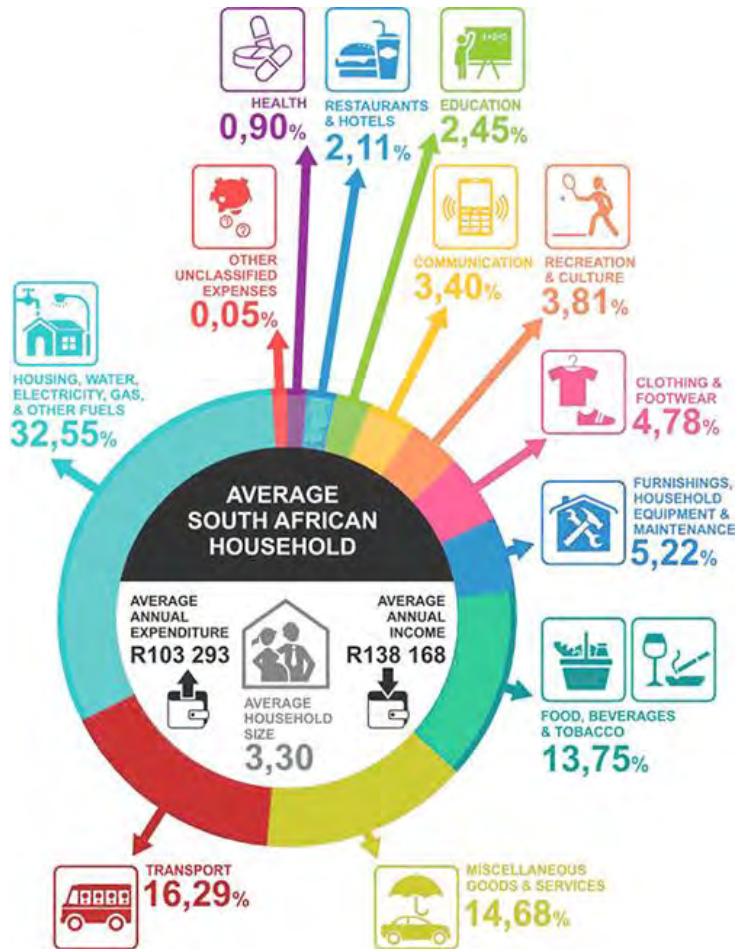
- Housing, water, electricity (33%) transport (16%) and goods and services (15%) = **64%**

- Education (2%), Health (1%), Recreation (4%) = **7%**

- The South African Household Survey of 2020 indicates that workers who used the train travelled 107 minutes, bus travellers 84 minutes and taxi users 63 minutes to get to work in the morning (Statssa, 2022a).

- Two-thirds of South Africa's poorest households spend 20% of their monthly household income on transport (Statssa, 2024).

Bulk services: How can services be made more reliable and affordable?

South Africa Electricity Shortfall
Source: Eskom and Bloomberg calculations
Bloomberg
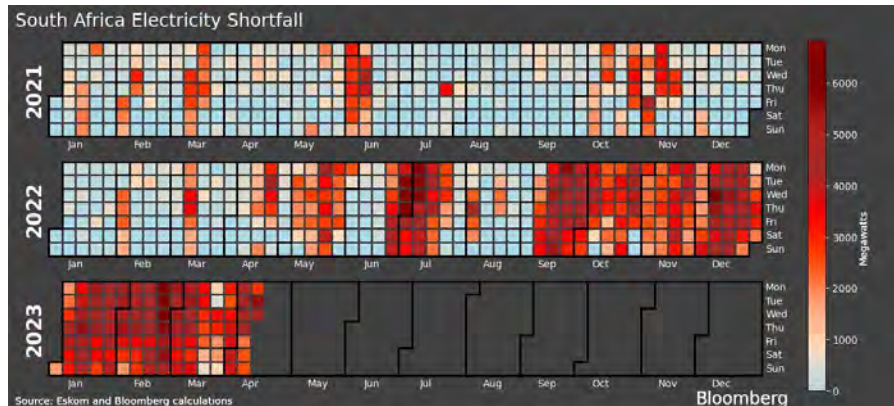
- Reduced electricity availability, prolonged outages
- 40% of treated water is lost to leaks and illegal connections (SAICE 2022)
- 34% of South Africa's 1,186 urban water supply systems at high to critical risk of failure (SAICE, 2022)
- Municipal water supplies increasingly unreliable - 30% of households reporting a dysfunctional water supply service in 2021 (Statssa, 2022a).

Culture and age: How does housing respond to culture and age?
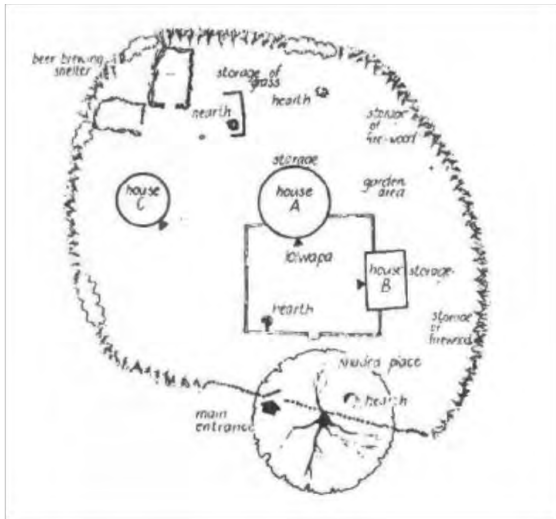
- Wide range of different cultures and practices

- Age groupings in households: babies, toddlers, children, teenagers, young adults, adults, retired fit people, older people who may require support

New technologies, methods and materials: How can these be applied?

- Artificial Intelligence
- New business models
- Co-living and co-working
- Smart technologies
- Simulation and modelling
- Digital twins
- Nature-based solutions
- Regenerative
- Circular economy
- Biobased materials
- Mycoremediated materials

Future: What sort future do we want to achieve?
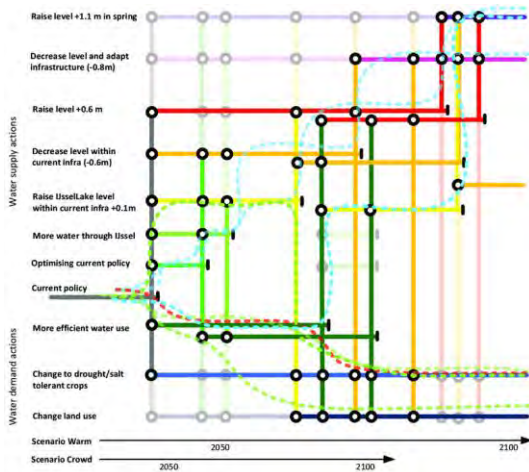
- How would you like to live and work in future?

- What do others see as a desired and optimal future?

- How do you develop a shared vision for the future?

- How is this achieved?

- What development pathways can be used to work towards this?

- How do these pathways take into account and address the current situation, vulnerabilities and future change?

Summary, questions, references

1. **Select:** Questions, focus
2. **Research:** Explore, understand
3. **Concept:** First principles, develop
4. **Rigour:** Pursue to logical conclusion
5. **Present:** Rational, performance