



TOPIC FOR DIALOGUE:
INCREASING RESILIENCE AND
ENERGY, THERMAL AND WATER
EFFICIENCY IN SA HOMES

SESSION 19

Facilitated by Jacus Pienaar at the NCCRD,
Gallagher Estates, 12 November 2014

The brief for our dialogue this afternoon



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- How to manage the transition of the residential sector to a climate resilient and low carbon society?
- Specifically:
 - How can planning ensure that peoples' homes in villages, towns and cities are climate-proofed?
 - Is enough being done to promote energy, thermal and water efficiency in SA homes?
 - Add a question – adaptable solutions for different scales, and the range of accommodation circumstances from shacks in shanty towns through to middle income formal suburbia?
- Disclaimers:
 - Not a scientific/academic paper
 - Not much content – more just points to elicit and guide discussion
 - More questions than answers, but feel free to add a few more!

Resilience in human settlements



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- Llewellyn van Wyk, CSIR, quoting Walker et al in his paper: "Building resilient human settlements in a climate of change": Current interdisciplinary discourse on resilience studying interactions of humans and ecosystems via socio-ecological systems, and...need to shift from the maximum sustainable yield paradigm to environmental management which aims to build ecological resilience through resilience analysis, adaptive resource management, and adaptive governance (Walker et al, 2004).
- Framework for building resilient human settlements (van Wyk):
 - Understanding socio-ecological systems, interaction (improved model predictions at different scales)
 - Reducing human settlement footprint (water, energy, waste, pollution)
 - Adapting the way we live (consumption, moving around)
 - Innovating for resilience (passive and active technologies, bio-based materials)

Any help from human settlement development policy, planning, regulatory, funding frameworks in SA?



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- Policies, planning guides and frameworks (Red Book, BNG, NDP, NDHS/HDA Spatial Master Plan, metropolitan ToD plans, etc) all say the same things:
- Break the mould of apartheid and car-based spatial planning and development – integration, mixed use, higher densities, alignment of planning for economic development, infrastructure, transport and housing...
- In practice the status quo proves to be stubbornly enduring, and perpetuated through ongoing low density, peripheral housing development, and little place for the poor in better locations, and in the ToD corridors and nodes (reality of land markets)
- Some regulation for greater energy efficiency in residential buildings– SANS 208, SANS 10400-XA
- Limited funding for “greening” initiatives
- Limited incentives for for alternative/renewable domestic energy supply on site and/or selling back to grid
- Planning rules need adapting to allow on site energy alternatives

What efforts are being made in practice at project level: individual homes or multi-unit buildings or estates?



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- “Green” and hybrid green/grey infrastructure – not much of it?
- Location of developments – e.g. social rental housing in restructuring zones
- Adaptive re-use (inefficient older buildings, cost of retrofitting)
- Passive solar design (orientation, thermal mass, insulation, etc)
- Low impact, low embodied energy “Green” building materials and innovative methods– difficult to wean ourselves from traditional materials and methods, limited availability of viable systems, and beware “greenwashing”
- Design for deconstruction and recycling
- Water saving devices, rain harvesting, waterwise gardening, greywater recycling
- Energy saving devices (especially hot water, space heating, cooling)
- Better waste management
- Resident education and involvement in food gardens, recycling, etc

Ultimate green house - for all seasons?



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