how to overcome spatial fragmentation

housing disaster

and introduction in South African Housing- its context, policy and building technology

quality or quantity?
1. context - south africa& the capital city of tshwane
   a. physical
   b. socio - economic
   c. political

2. housing background in South Africa
   a. policy changes
   b. challenges

3. building technology [subsidised housing]
   a. materials
   b. water

4. new urban visions
46.7 mil people [Statistics SA 2005]
unemployment rate 42% [Statistics SA 2005]
10.5% of population live under $1 [UNDP-SA 2003]
life expectancy 51.4 years [UNDP-SA 2003]
5% national budget to housing [National Treasure 2002-2006]
houses delivery rate of 350 000 houses a year [Housing White Paper 1997]

2002-2006: 2% national budget spend on housing
[National Treasure 2002-2006]
houses 200 000 delivered a year
[National Treasure 2002-2006]

2002-2006 households living in shacks increase by 400 000
[National Treasure 2002-2006]

300 000 households per year unable to access housing
### Socio-Economic Data

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Tshwane</td>
<td>1,966,000</td>
</tr>
<tr>
<td>Size (Population)</td>
<td>1,470</td>
</tr>
<tr>
<td>Size (Average density people/km²)</td>
<td>660</td>
</tr>
<tr>
<td>House (Average rent per month in US$)</td>
<td>5,400</td>
</tr>
<tr>
<td>Income (Average rent per month in US$)</td>
<td>13</td>
</tr>
<tr>
<td>Wealth (Working time required in minutes to buy 1kg of bread)</td>
<td>0.9</td>
</tr>
<tr>
<td>Travel (Average cost of public transport ticket in US$)</td>
<td>29.1</td>
</tr>
<tr>
<td>Energy (KWh per capita per annum)</td>
<td>6,700</td>
</tr>
<tr>
<td>Water (Litres per capita per day)</td>
<td>400</td>
</tr>
<tr>
<td>Age (Average age)</td>
<td>32.8</td>
</tr>
</tbody>
</table>

Sources: The Endless City, The Urban Age project by the London School of Economics and Deutsche Bank's Alfred Herrhausen Society, Statistics South Africa, GWA studio compilation/presentation.
<table>
<thead>
<tr>
<th>socio-economic</th>
<th>SIZE</th>
<th>DENSITY</th>
<th>HOUSING</th>
<th>INCOME</th>
<th>WEALTH</th>
<th>TRAVEL</th>
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<th>AGE</th>
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<td>city of tshwane</td>
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- **Population**: 1,986,000
- **Average density**: 1,470 people/km²
- **Average rent per month in US$**: 660
- **Average rent per month in US$**: 5,400
- **Working time required in minutes to buy 1kg of bread**: 13
- **Average cost of public transport ticket in US$**: 0.9
- **Murder rate per 100,000 inhabitants**: 29.1
- **KWh per capita per annum**: 6,700
- **Litres per capita per day**: 400
- **Average age**: 32.8
2. housing background
housing policy & urban development

00.0 First “private” Dutch “refreshment station” declared in the Cape in 1652
01.0 Import of slaves and segregated settlements around the Cape by 1657
02.0 British “invent” concentration camps, employ scorched-earth policy and destroy rural villages and farms in 1899-1902
03.0 Marabastad in Pretoria becomes the first separated African “location” and the site of first forced removals in South Africa in 1880
04.0 Land Act, unequal allocation of Urban Space in SA by 1913

06.0 Universal declaration of Human Rights with specific recognises housing rights in Article 25 in 1948
07.0 Beginnings of Apartheid and further social segregation in 1949
Provision of housing for “urban natives” by apartheid government a key to control growth of cities in 1950
08.0 International Covenant on Economic, Social and Cultural Rights (ICESCR) with specific articulation of international right to adequate housing in 1966
09.0 State Policy to relocate “afrcians” to homelands in 1971
Demolition of District 6, Cape Town, and forced removals in 1977
10.0 Repeal of Group Areas Act in 1991 - Hillbrow first “mixed residential” area in SA
11.0 Migrants from neighbouring countries begin to stream into South Africa in 1992 and Pres Mandela to address dire housing shortage in a vigorous manner in 1994
12.0 no coherent housing& settlement policy in SA - pre 1996
13.0 Constitution of SA, Act 108, the right to have access to adequate housing in 1996
14.0 Housing White Paper, 1994-main housing legislation to address “inequitable SA cities”
15.0 Housing Act, 1997 (No.107 of 1997)-basis of housing subsidy programme and governs housing sector
National Spatial Development Perspective, 2003
17.0 Housing Tenure - Social Housing Policy 2005 and Rental Act 1999 (No.50 of 1999)
18.0 Development Facilitation Act, 1995(No.67 of 1995)-“fast track”
reconstruction and general rules for land development

gwa studio compilation/presentation
Government has more than one housing policy: Social, emergency, informal housing [Martin 2009]

Housing is still highly politicised [Dewar 2009]

Government as facilitator rather than provider of Housing [Breaking New Ground 2007]

Potential role of Housing policy as broader development instrument underestimated [Dewar 2009]

Housing not a problem to be solved through policy or ‘projects’ but rather long term process of improvement and empowerment [Dewar 2009]

Re-emergence of place based NGO’s [Dewar 2009]

2. housing background
Lack of real support for people-driven housing process  [Public Service Commission 2003]

Lack of Government capacity to support housing delivery  [Public Service Commission 2003]

Quantity over quality, low subsidy  [Public Service Commission 2003]

Legacy of Apartheid and spatial segregation
Cities has become more unequal that they were 10 years ago  [The South African Cities Network’s 2004 State of the Cities Report]

Affordability- 80% of new households unable to gain access to housing on their own  

Location of new housing projects on periphery of cities and towns  [The Housing Evaluation Scheme]

2. housing background
3. building technology

Housing Typologies

- Subsidized houses
timber trusses
trusses at 750mm centers
and battens spaced at 900mm centers

cement blocks
290x140x90mm 7mPA
Maxi concrete brick
13 kilojoules/kg embodied energy

cement foundations
concrete floors to be power floated and certified by engineer
13 kilojoules/kg embodied energy

clay roof tiles
55kg/m² and fixed with galvanized roof nails according to sabs 623
4 kilojoules/kg embodied energy

steel doors & windows
1mm press steel frames and according to sabs 727
20 kilojoules/kg embodied energy

concrete wash trough
reinforced concrete with reeded front
13 kilojoules/kg embodied energy
3. building technology

- paving bricks
- wood gumpoles
- perforated paving bricks
- water storage tanks

Existing on site

<1km from site

±25km from site

±65km from site
Policies and politics the art of control or to serve?
Current policy effectively disempowers people
Housing, houses and the power to choose needed