Exploring sustainable burial practices in South Africa: Potential challenges and opportunities

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“Cities of the future – Provide, Protect, Play”
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Background

- Cemeteries – Functional and emotional spaces which record socio-cultural and religious change
  - Disposal of corpses and a place where in some cultures and religions, family and friends will visit the deceased
  - Connection of Living and Non-living

- Need for disposing of the dead
  - Acceptable methods
  - Religious Needs
  - Cultural Beliefs
  - Location
    - Accessibility
    - Public Perceptions

Motivation and Problem Statement

- Current Media Dialogue
- Space
  - Demand for future cemetery development
  - Competition with other land uses - Urban population and the demands for open space and housing are rapidly increasing
  - Full capacity reached land becomes disused

- Cost
  - Land
    - Privately-owned
    - Development – E.g. R20 million to build a new cemetery (SAPA, 2011)
    - Perpetual Maintenance (Private cemeteries have trust fund)

  - Burial
    - Gravesite fees – Opening and closing costs (re-use/recycling)
    - Burial insurance and Funeral service

Some Current Practices

International Practices
- Promession
- Sky Burial
- Green burials/Legacy Parks
- Conventional Burial
- Some Current Practices
- Vertical Burial
- Organ & body donation
- Resomation
- Sea Burial
- Recycling & Re-use
- Mixed-use
- Sea Burial
- Toying with use of deserted mines

Local Practices
- Conventional Burial
- Mausoleum
- Cremation
- Resomation
- Sky Burial
- Toying with use of deserted mines

Grey areas: Efficient management not space-saving

There has to be a change in our legislation before the method can be implemented in SA

Mixed-Use Solution

Pirannoo Cemetery in Perth, Australia
http://www.google.co.uk/imgres?imgurl

New Yorkers enjoying the 12th Annual Memorial Day Concert at Green-Wood Cemetery in Brooklyn
Examples of Parking Lot Cemeteries

Crowley Mausoleum – Decatur, Georgia

Tullahassee Creek Indian Cemetery – Sand Springs, Oklahoma

Burr Cemetery – Commack, New York
Disused Land – Perpetual Management and Maintenance

A Thai gardener tends the graves

- Land could have potential for agriculture
- Requires infinite management and maintenance
- How can these be created as retreats from the cold environments presented by full cemeteries?

http://www.google.co.uk/imgres?imgurl

www.csir.co.za

Information Gathering Tools

- Literature Surveys – Local and International
  - Academia – Mostly environmental-related (e.g. Groundwater pollution)
  - Media – Newspaper clips and online articles
  - Cities websites (e.g. City of Johannesburg)

- Interviews
  - Funeral homes / directors (e.g. Doves, Collinge and Co., Martins, Poonees, Stellawood)
  - Email correspondence with metros (e.g. City of Tshwane)
  - Telephonic interviews with crematoria around the country

- Observation
  - Visit to Fourways Memorial Park
  - More upcoming visits (e.g. Diepsloot Cemetery)

Challenges

- Data
  - Accurate statistics (e.g. Number of cemeteries, legal and illegal)
  - Sensitive information e.g. Unsuitable land for burial (e.g. high water table)

- Tariffs/Pricing structures - difficult to compare

Related Work

Accessibility Mapping of Cemeteries (CSIR, 2008)

- Tested 2% (global standard) per annum of grave recycling after 10 years in eThekwini, which has had to policy review due to insufficient suitable and affordable land for future burial

- 2 scenarios investigated, both based on current (2007/2008) burial and recycle rates
  
a) Calculated for a 10 year period and allows for overflow to other cemeteries
   - No immediate spatial backlog
  b) Calculated up to 2050, 2% recycling applied after 10 years
   - No excess is carried to another cemetery
   - Each cemetery accumulates its own backlog
   - Lifespan of facility terminated until recycling is implemented

- Space proved insufficient in current cemeteries beyond 10 – 20 years unless a much greater rate is adopted
- Minimum space required for 2016 would be approx. 10 000 graves at 50 000m² or 5ha for a single year

Norms and standards (CSIR, 2010)

- Review of access norms and threshold standards for spatial provision and development of social facilities and recreational spaces
- City of Cape Town and eThekwini
- If death rate is higher or fewer people are cremated, demand for land required for burial will increase
- Recycling of grave space can reduce the requirement
- The site selection of suitable land for burials is critical and requires prior geological studies – Difficulty in high water table areas (e.g. City of Cape Town)
- **Careful consideration needs to be given for allowing multi-purpose use of the land such as use as parkland, grazing, etc. — if acceptable to community**
- Clustering and the multiple-use of facilities present considerable potential for cost savings and efficiencies, however, this is only possible under conditions of good design and management

<table>
<thead>
<tr>
<th>Population threshold</th>
<th>100 000 people</th>
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<tbody>
<tr>
<td>Land required / Site size</td>
<td>15 ha over 30 years</td>
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Assuming 1.5% annual death rate, 63% of the dead are buried, no re-burials for 30 years
Conclusion and way forward

Urgent need
- Practical and acceptable alternative methods of human remains disposal taking into consideration different cultural and religious groups
  - Avoid uncontrolled illegal burials
- Government – Publication of new legislation for new unconventional methods (e.g. Resomation)
- Formal consultation of communities – Own the decision to let go of old practices
- Intensive research – Cultural and religious perceptions towards alternative methods of body disposal/ Cost implications of business as usual

Asking the right questions
- Education and Awareness Campaigns?
  - Bereavement Services – Educate members of public regarding benefits (e.g. cost-efficient/environmentally-sound) of alternative methods
- Involving Churches and Traditional Leaders?
- Changing tariffs or pricing structures?

“Cities of the future – Provide, Protect, Play”
Thank you for listening