3D Cadastral Parcels in South Africa
Representing the Third Dimension in the South African Cadastral System

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South Africa
The Need for 3D in South Africa
The International Need for 3D

- Increased Need for Development Space
- Increasingly Complex Urban Environments
- Previously unseen RRR Objects - capture with Clarity
- Increase Tenure Security + Attract Investment
- Improve Land Use Management + Planning
An Introduction to South African Property Law

- 2D Cadastre
  - Implied 3D RRRs
  - Attached to Land Parcel
- Deed + Diagram → Registry + Cadastre
- Land Parcel = Smallest unit of Cadastre
- Impossible to fully separate property object from land parcel
<table>
<thead>
<tr>
<th>Legal Tool</th>
<th>Limitations of this Tool</th>
</tr>
</thead>
</table>
| **Condition Clause**| - No geometric record of the property object  
                        - Create complex, inaccessible title deed                                           |
| **Sectional Title Act** | - Works well, but issues arise when defining participation quota  
                        - Land is inherently tied to sectional title                                        |
| **Servitudes**      | - minor right in comparison with ownership  
                        - no independence of ownership                                                              |
| **Leasehold**        | - Timely to create and impermanent  
                        - Dependent on surface parcel owner                                                          |
Case Study 1: Malawi House
ENCROACHMENT DATA:

<table>
<thead>
<tr>
<th>SIDES</th>
<th>METRES</th>
<th>DIRECTIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BG</td>
<td>0.93</td>
<td>181 25 30</td>
</tr>
<tr>
<td>GH</td>
<td>13.42</td>
<td>272 58 10</td>
</tr>
<tr>
<td>MJ</td>
<td>0.39</td>
<td>1 13 30</td>
</tr>
<tr>
<td>JB</td>
<td>13.41</td>
<td>90 39 30</td>
</tr>
<tr>
<td>JD</td>
<td>2.32</td>
<td>1 13 30</td>
</tr>
</tbody>
</table>

NOTES:
1. THE FIGURE ABCDEF REPRESENTS REMAINDER ERF 992 SIMON'S TOWN.
2. ALL MEASUREMENTS ARE GIVEN IN METRES.
3. ———— DENOTES PROJECTIONS ABOVE GROUND FLOOR LEVEL BEYOND EXTERIOR SURFACES OF BUILDING AT GROUND LEVEL.
4. THE FIGURE BGH REPRESENTS BALCONY OVERHANG ENCROACHMENT OVER ST. GEORGES STREET, 9 SQUARE METRES IN EXTENT.
5. THE FIGURE BDFC REPRESENTS BALCONY OVERHANG ENCROACHMENT OVER ERF 1019 SIMON'S TOWN, 26 SQUARE METRES IN EXTENT.
6. ENCROACHMENTS: A - 10MM ROUND HOLE 750, B, C, D - 10MM DRILL HOLE IN BRICK; D, E, G, H - WALL CORNER; J - NO BEACON.
7. THE LINE Dx REPRESENTS THE EASTERN BOUNDARY OF WICKBOOM LANE.
8. FOR EXCLUSIVE USE AREAS, SEE SHEET 3.

D.H. BATES
LAND SURVEYOR
107 ARCADE OFFICES
110 MAIN ROAD
FISH HOEK, 7975
5/12/2009 DATE

STEWART & ENGLE MALAWI HOUSE
DRAWING TITLE:
BLOCK PLAN
SCALE: 1/200

FIRST FLOOR PLAN
Case Study 2: Standard Bank Building

Images courtesy of Google Earth
1. The figure A, B, C, D, E, F, G, H represents a Building Rights Servitude Area and extends from a height of 21.70m to a height of 48.90m above mean sea level.

2. The line JD represents the north western boundary of a Support Column Servitude Area 0.50m wide and extends to a height of 21.70m above mean sea level.

3. The line DE represents the north eastern boundary of Support Column Servitude Area 1.05m wide and extends to a height of 21.70m above mean sea level.

4. The line EK represents the south eastern boundary of a Support Column Servitude Area 0.50m wide and extends to a height of 21.70m above mean sea level.

OVER REMAINDER ERF 192 ROGGEBAAI

situate in the City of Cape Town
Administrative District of CAPE Province of the Western Cape
Surveyed in February 2012 - March 2014

by me, K A Hodge (PLS 0267) Professional Land Surveyor

This diagram is annexed to No. dated
Registrar of Deeds No. 1953. 3938

The original diagram is No. 3661/1952 annexed to Transfer
S.R. No. 366/2014
Comp. BHG2-1162 (M1594)
LPI C0160048
FIG WORKING WEEK 2017
Surveying the world of tomorrow - Helsinki Finland 29 May - 2 June 2017
From digitalisation to augmented reality

Images courtesy of Google Earth
The Need for 3D in South Africa
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&

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