MARIKANA HOUSING PROJECT – PHASE 1
SUSTAINABLE DESIGN CONCEPT

LONMIN

MIDGARD CONSCIOUS CHOICE

THEORY OF PERMACULTURE DESIGN ZONES

Zone	Permaculture zones for homesteads	Permaculture zones for village clusters
Zone 00	The Individual	The People
Zone 0	Home dwelling	Village green and town square
Zone 1	Domestic self sufficiency - pick and pluck plants for daily usage	Social self sufficiency - commercial, public and entertainment facilities
Zone 2	Small animal stock and orchards	Dwellings and homestead gardens
Zone 3	Crops, forage and stored food	Agricultural allotments
Zone 4	Gathering, forage, forestry and pastures	Orchards and passive open space
Zone 5	Natural environment	Natural environment

SUSTAINABLE DESIGN STRATEGY

Key Performance Indicators	Action Plans	Critical Success Factors	Objectives
Compilation of training programme for sustainable lifestyles.	Design suitable training courses for housing beneficiaries.	**Zone 00** – Sensitize and train housing beneficiaries about sustainable lifestyles	• **Provision of decent and affordable housing** • **Provision of housing with a low emergy footprint** • **Provision of housing with a low energy usage** • **Provision of opportunities for improved self sufficiency** • **Provision of an improved natural environment** • **Provision socio-economic opportunities**
Town plan layout modified to include a village green and town square.	Design concept for a village green and town square.	**Zone 0** – Establish a village green and town square	
Town plan layout modified to include development nodes for commercial, public and entertainment facilities.	Design concept for development node(s) with commercial, public and entertainment facilities.	**Zone 1** – Establish facilities for social self sufficiency	
Dwellings designed and sited with best orientation. Dwellings designed with a homestead garden.	Design concepts for dwellings with attributes for enhanced sustainability.	**Zone 2** – Establish dwellings with homestead gardens for food security	
Town plan layout modified to include agricultural allotments.	Design concepts for agricultural allotments.	**Zone 3** – Establish agricultural allotments for income generation	
Town plan layout modified to include orchards, passive open space and urban greening.	Design concepts orchards, passive open space and urban greening.	**Zone 4** – Establish orchards, passive open space and urban greening	
Town plan layout modified to include the natural environment.	Design concepts for the natural environment.	**Zone 5** – Establish the natural environment	

Values

Earth Care
- Maintain eco-diversity
- Environmental jurisprudence
- Plan for 7 generations

People Care
- Equal rights
- Peace and harmony
- Non-violence

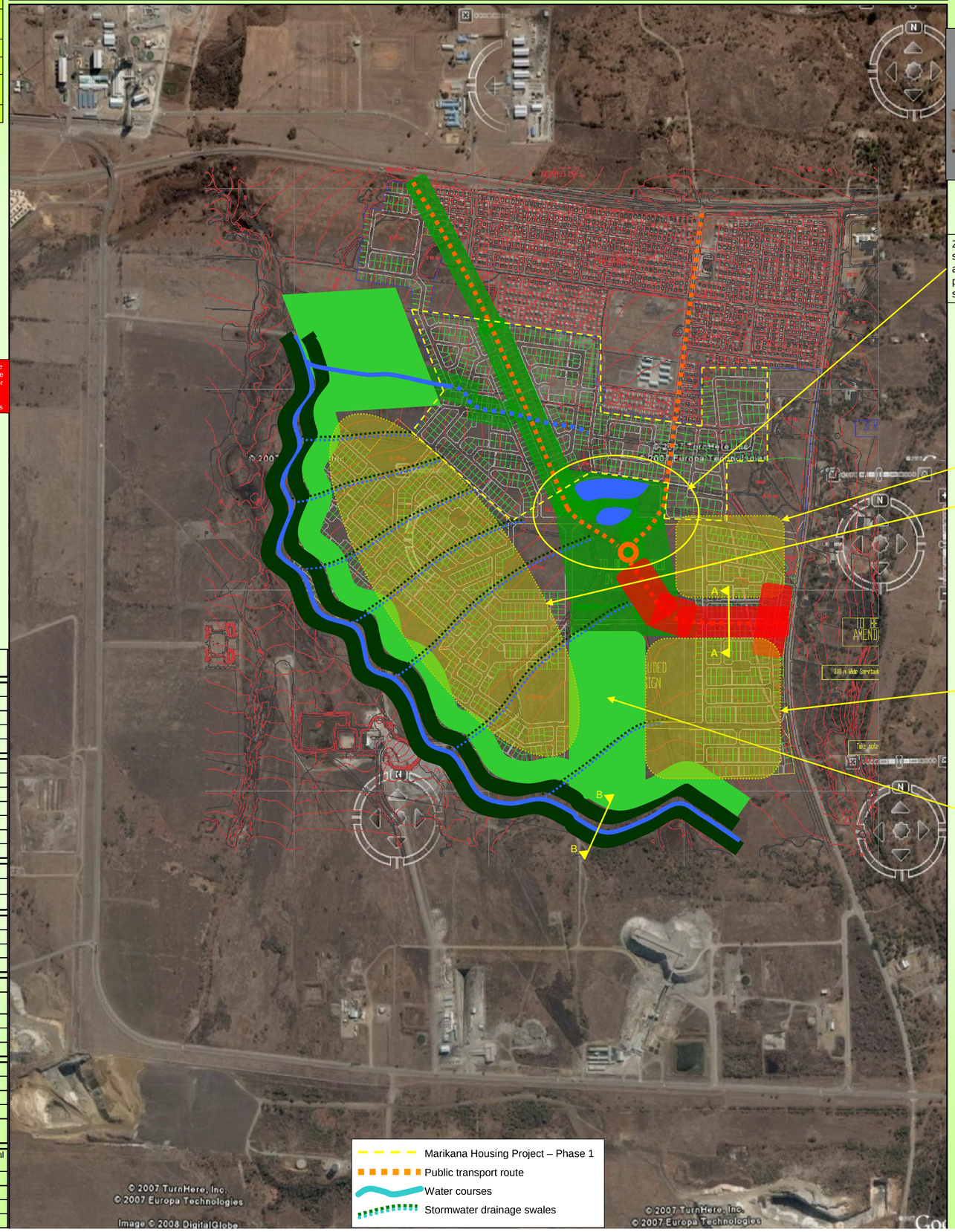
Fair Share
- Right livelihood
- Contraction & convergence
- Living within ones means

Goal

To provide sustainable housing for LONMIN housing employees

SUSTAINABLE DESIGN COMPONENTS

#	Critical Success Factor	Action Plans	Sub #	Design Components
1	**Zone 00** – Sensitize and train housing beneficiaries about sustainable lifestyles	Design suitable training courses for housing beneficiaries.	1a	Sensitisation towards sustainable lifestyles
			1b	Basic Permaculture design course
			1c	Natural earth building course
			1d	Advanced Permaculture design course
			1e	Ecovillage design course
2	**Zone 0** – Establish a village green and town square	Design concept for a village green and town square.	2a	Playground
			2b	Amphitheatre
			2c	Tea garden
			2d	Community hall
			2e	Pedestrian walkways
			2f	Water features
			2g	Sports kick around area
3	**Zone 1** – Establish facilities for social self sufficiency	Design concept for development node(s) with commercial, public and entertainment facilities.	3a	Commercial facilities for SMEs
			3b	Public facilities for local municipality
			3c	Entertainment facilities
4	**Zone 2** – Establish dwellings with homestead gardens for food security	Design concepts for dwellings with attributes for enhanced sustainability.	4a	Residential buildings for young families
			4b	Residential buildings for mature families
			4c	Residential buildings for pensioners
			4d	Homestead gardens
5	**Zone 3** – Establish agricultural allotments for income generation	Design concepts for agricultural allotments.	5a	Site infrastructure for allotments
			5b	Rainwater harvesting / irrigation system for allotments
			5c	Fruit trees and plant material
			5d	Sheds and small tools
			5e	Market gardeners co-operative
6	**Zone 4** – Establish orchards, passive open space and urban greening	Design concepts orchards, passive open space and urban greening.	6a	Fruit and nut trees for orchard areas
			6b	Rainwater harvesting / irrigation systems
			6c	Tree nursery
			6d	Demarcated walkways and footpaths
			6e	Indigenous, fruit and nut trees for urban greening
7	**Zone 5** – Establish the natural environment	Design concepts for the natural environment.	7a	Earth embankment and water course for visual and sound barrier
			7b	Indigenous trees and plant materials
			7c	Earth embankments for wetlands
			7d	Demarcated walkways and footpaths
			7e	Aquaculture species



Cross-Section AA
Zone 1 : Facilities for social self sufficiency, namely, public, community, commercial and entertainment.

Zone 0 Cluster - Village green and town square comprising;- playground, amphitheatre, tea garden, community hall, pedestrian walkways, water features, and, sports kick around area

Zone 2 – Establish dwellings with homestead gardens for food security

Zone 3 – Establish agricultural allotments for income generation

Zone 4 – Establish orchards, passive open space and urban greening, namely;- fruit and nut trees for orchard areas, rainwater harvesting / irrigation systems, tree nursery, demarcated walkways and footpaths, indigenous, and, fruit and nut trees for urban greening.

Cross-Section BB
Zone 5 - Earth embankment and water course for visual and sound barrier