Designing a Model Sanitation Centre for Monwabisi Park

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Sanitation Situation

In 1996, the post-apartheid South African Bill of Rights declared "access to basic water supply and basic sanitation" for all of its citizens. However, government backlog and continued settlement expansion have led to various troubling conditions and practices within informal settlements such as Monwabisi Park, including:

- *Damaged Communal Taps & Toilets*
- *Common Use of Pit Latrines & Municipal "Black Buckets"*
- *Casual Approach toward Hygienic Practices*



Despite previous work in Monwabisi Park and elsewhere, there is still a desperate need for immediate water and sanitation services. The law requires a family-to-toilet ratio of 5:1, and yet even if all toilets are assumed functional 69 families must share a single stall. Water misuse and contamination still exists within the park, and the alarming 2005 infant mortality rate of 34.72% indicates that hygienic practices have not sufficiently improved to prevent the spread of disease. Previously efforts may have set the stage for improvement, but have provided little to date in terms of tangible change for the community.

Mission

The goal of this project is to devise an integrated and sustainable water and sanitation system within the "Redevelopment Seed" that may serve as a model for waste treatment and sanitation practices throughout Monwabisi Park.

Objectives

- Become familiar with the sanitation history and current conditions within Monwabisi Park.
- Explore successes of global redevelopment precedents.
- Define user capacity and priority components of facility.
- Determine "best-fit" sanitation system for conditions.
- Develop sanitation system and structural designs.

Methods

Research the Concept: Consulted Previous Projects, Communicated with City Officials and Sanitation Specialists, Evaluated Relevant Literature and International Case Studies

Define the Scope:

- Determined Priority Services based on Need and Expectations
- Defined User Population according to Experimental Capacity
- Mapped Available Area in relation to Surrounding Structures and Housing Development Plans

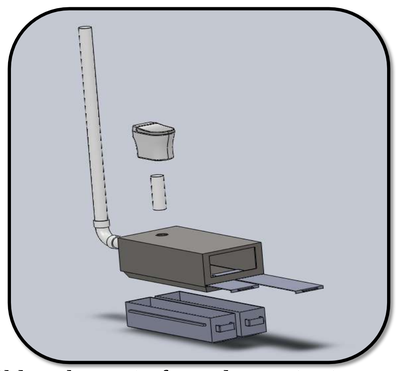
Select the Sanitation System: Evaluated Key Decisions of

Centralized versus Decentralized -> Decentralized
Water-borne versus Waterless -> Waterless
Commercial versus Novel Design -> Combination

Responses to System "RFP" Inquiries used to Evaluate Criteria:
Spatial Requirements-Financial Investments-Maintenance Expectations-Health Risk Control- Social Acceptability

Design the Facility:

- Incorporated Existing Facility Examples
  -> MobiSan Project (Athlone), EnviroLoo & Worm Composting (Indlovu Centre)
- Assembled Floor Plan based on Composting System Design, Spatial Conservation, and Aesthetic Appeal



Possible schematic for a dry sanitation system

References

Cite Information we got from the background…Jaco

The Model Sanitation Centre

Dry Composting Sanitation System
-> Approximate User Maximum of 200 Residents with Possibility for Future Expansion or Replication

Facility Components
-> Toilets, Handwashing Station, Laundry Station, On-site Management, Gated Perimeter

Floor Plan and Aerial Spatial Planning
-> __ x __ Area, Abutting Community Centre Site

Picture of sanitation facility with housing development and community centre to show layout (when available)

Recommendations

- Sustainable Adaptations for Grey Water Reuse, Rainwater Collection & Compost Application to Food Gardens
- Use of Anaerobic Baffled Reactors in Future Designs
- UCT Involvement in Monitoring Functionality & Effluent Safety
- City Involvement in Water Provision & Caretaker Duties

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