



Desludging services in Ivory Park

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THE POLITICAL CHANGES in South Africa have led the way for a large influx of people from the rural areas to the cities. In Johannesburg for instance the extent of and density within squatter areas is increasing at a high rate, putting ever increasing demands upon sanitation services. A myriad of different forms of sanitation are being provided and unkept, often using urgent emergency procedures such as communally utilised chemical toilets, dry pits and poorly maintained low volume flush units. Public health requirements dictate that sufficient sanitary facilities must be provided at all times to prevent the spread of disease, and provide a standard that is hygienically and aesthetically acceptable to the user.

On the outskirts of Johannesburg the large formalised squatter development of Ivory Park has a system of aquaprivvy type sanitation that was installed during the apartheid days. In order to work effectively, these individual toilets required hand carried water for their cisterns. The soakaways were inadequately sized, resulting in odours, sodden soils, surface pollution, and potential health hazards. Naturally there is great local dissatisfaction regarding their usage.

Knight Piesold, together with Bosele Consultants their associated Community Support Consultants, were charged with the project to provide a satisfactory method for desludging the aquaprivvies on a regular basis. This operation would involve the desludging of between 500-800 units daily, each one with a capacity of between 75 and 2000 litres!

Ivory Park residents are very community minded, with a strong representation of leaders and councillors who view one of their tasks as that of providing as much employment as possible to the township residents. There is a belief that the process of emptying of septic tanks and aquaprivvies is work of an unskilled nature that can readily be accomplished by local people on their own. It was the Consultant's task to assist in the evolution of a scheme that would allow for as much local employment as possible, and provide a sustainable efficient and hygienic method for completing the task.

The crux of the operation is to provide a traditional type of Civil Engineering contract, with the necessary safeguards and provisos to ensure effective operation in Ivory Park. The following requirements have to be achieved:

Sufficient vacuum tankers with the necessary crews to accomplish the tasks

The contract will provide a mechanism to pay the contractor on a rate per aquaprivvy emptied. The tankers are

expensive items, normally rented from a supplier on a monthly basis. The Contractor will wish to use the smallest number of tankers possible to undertake the service using them continuously, in order to maximise his profit.

A system of reporting such that residents could interact with the service if problems were encountered

People who receive the service must have a channel through which they can voice disapproval should the service appear to be proving unsatisfactory. The team manager is always contactable. Similarly the representatives in the community are supporting the service, and provide an indirect policing forum ensuring that complaints within Ivory Park are minimised.

An organised approach, and tanker route planning enabling the residents to be ensured of a regular desludging service, and sufficient work for the tankers to ensure that the contractor was able to operate the service efficiently and profitably

The system must operate efficiently, routes must be planned to enable the maximum productivity of the tanker service. Points for desludging must be near to the operative site in order to maximise the efficiency of the tanker running time. Plans of the area must be studied and schedules compiled to ensure that a regular service is put in action for the whole of the area.

Guarantees must be built into the contract to ensure that the service can continue should insolvency or non performance of the contractor disrupt the continuance of the service

Disruption of the service can create health hazards to the community at large. Hence it is imperative that safeguards in the form of financial guarantees are included that may be invoked, if the Contractor fails to conform.

The operation

The contractor studies the plans of the area and in common to the planning of any community service maximises the efficient running of the plant. Sizing of the vacuum tankers can vary from large sophisticated machines in wide planned suburbs to small locally operated units that can work in congested unplanned informal areas.

Besides the driver, a team of hose runners will go from house to house placing the suction pipe into the aquaprivvy, and as effectively as possible emptying the unit. A checker will come around randomly, with a measuring stick to ensure that the emptying actually is complete in each tank.

It is the householder's responsibility to ensure that access to the aquaprivvy is maintained at all times, since the desludging team cannot be delayed. A signature is obtained from the householder upon completion of the operation. The signature received becomes proof for a basis of payment of the completed operation.

Most of the operators come from Ivory Park itself. Local acceptance is essential, and the local people are anxious to gain as much employment as possible, with the hope of obtaining a source of sustainable employment. The main contractor has a chance of being more favourably considered if he is seen to be providing benefits to the community in the form of employment, training and fostering entrepreneurial skills. Certain forms of possible enterprises under consideration include:-

Sub contracts with local groups

Employment of a local person to provide a controlled team of labour to work alongside the main contractor. The main contractor would "loan" the sub contractor the equipment which after a period of time would become his own personal property, which the owner could ultimately hire back to the main contractor. Hence the sub contractor would be responsible for a more substantial share of the work in time, as his skills developed.

Training of management skills

Selected personnel Identified by both the contractor and the community from within Ivory Park are incorporated into the management structure. It is hoped that when the contract is renewed in 1998, there could be enough experience within the community to enable the residents to prepare and execute a contract themselves for part or whole of the area, assuming that they are confident and sufficiently acceptable to the business community to raise the necessary performance guarantees.

Encouraging the development of small businesses

Massive areas surrounding Johannesburg require and rely on chemical toilets. Certain areas are not viable to be served by a main supply contractor. It is in both the interest of the main contractor and the entrepreneur that these operations are carried out by the smaller local resident, after adequate training has occurred.

The future

The use of the Aquaprivvies are not acceptable as long term solutions to the sanitation needs for communities. In Ivory Park there is a policy of providing in time a traditional piped sewerage system. However, people cannot wait for the ideal and have to rely on alternative methods for the present until sufficient capital and resources become available. The interim scheme must be acceptable, economic and above all, hygienic. The combination of engineering acumen, management techniques, and above all the acceptance and encouragement of the residents relying upon the desludging service are necessary for a successful, howbeit unusual project.

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