

# The role of the CSIR/WRC Sanitation Technology Demonstration Centre in creating awareness, sharing information and in decision-making regarding sanitation technologies

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## INTRODUCTION

The CSIR and the Water Research Commission (WRC) have envisioned a Sanitation Technology Demonstration Centre to provide a cutting-edge environment for bringing to light old and new, as well as promising sanitation technologies. The purpose of the centre is to provide a platform for research, innovation and cooperation into the sanitation technologies represented in the facility. This facility is intended to address various challenges experienced by organisations and institutions that participate in the provision of sanitation services. It will enable government and related service providers to support on-the-ground implementation of sanitation technologies while not ignoring the impact of such technologies on the environment.

CSIR Built Environment is developing such a sanitation demonstration centre on the unit's innovation site at the CSIR Pretoria campus. The development of this centre, a first in South Africa, was initiated by the WRC and implemented by the CSIR. The aim is to provide practical and visual information on various sanitation technologies to highlight technologies that support sustainable human settlements.

## OVERVIEW

The Sanitation Technology Demonstration Centre being constructed will present sanitation technology providers and users with transparent, mostly approved, comparable and accessible technologies. The facility should lead to overcoming the barriers to accessing proper sanitation through exposing, educating and supplying information to all role players in the field of sanitation. It is hoped that this facility will play a role in reducing the number of sanitation-related diseases and the pollution of the marine environment, water resources and groundwater. The outputs of the centre will include:

- Demonstration of various sanitation technologies suitable for implementation in different communities in South Africa
- Hands-on training on how to construct toilets, e.g. the Ventilated Improved Pit latrine (VIP) and some composting toilets
- An on-site workshop for stakeholders and beneficiaries after the construction work is completed
- Guided tours of the site for visitors.

## MOTIVATION

In South Africa, there have been health and hygiene, as well as environmental concerns over faecal sludge and sewage disposal management with problems often receiving limited or no attention. Lack of proper management in waterborne sewer systems frequently led to a negative output downstream. Increased operational problems as reported in the spot check assessments of water and sanitation services prepared by the CSIR and the Department of Water Affairs and Forestry (DWAF) in 2007 reduced the health improvements expected of the technologies. The WRC made funding available for the establishment of the sanitation demonstration centre and the development of sanitation technologies. This initiative fits in well with the larger CSIR initiative to establish a living research and demonstration facility at its Pretoria site for researching and demonstrating technologies that support sustainable human settlements.

## DEVELOPMENT OF THE CENTRE

The planning and preparation phase for the development of the CSIR Sanitation Technology Demonstration Centre included a literature review of other demonstration centres such as Sulabh, the Philippine Centre for water and sanitation, as well as the Ecosan Centre. Researchers looked at the demonstration of sanitation technologies internationally and the development of criteria for the selection of sanitation technology options to be constructed and the writing up of a report. **Figure 1** shows an image of the site from the north-eastern view.



Figure 1: North-eastern view of the CSIR BE Innovation Site

## POLICY AND DESIGN GUIDELINES FOR DEVELOPING SANITATION

All the sanitation technologies that will be exhibited on the site adhere to the following policy and design guidelines:

- (a) The *national imperative*: the South African government has set the targets of clearing the basic sanitation service backlog by 2014. Access to adequate, safe, appropriate and affordable sanitation services is part of the vision guiding the National Strategic Framework for Water Services (DWAF, 2003) that underpins the national imperatives for the water sector (including sanitation) of the country.

The national imperatives include (i) Meeting the needs of the people, (ii) The nation's growth and development imperative, (iii) Statutory requirements, (iv) Health imperatives, (v) Gender mainstreaming, and (vi) Water for Growth and Development initiatives (CSIR and DWAF, 2007).

- (b) Policy context: the following water sector policies and regulations affect the provision of sanitation in the country; (i) Water Services Act 108 of 1997, (ii) White Paper on Basic Household Sanitation (2001), (iii) National Strategic Framework for Water Services (2003), and (iv) National Water Resources Strategy (2004) (CSIR and DWAF, 2007)

- (c) The minimum design standards and norms for sanitation technologies: Public-funded projects must at least provide a basic level of service based on the Strategic Frameworks for Water Services (CSIR and DWAF, 2007).

In line with the policy and design guidelines, the centre should therefore, present sanitation facilities that are safe, reliable, environmentally sound, easy to clean, provide privacy, provide protection against the weather, well ventilated, keep smells to a minimum, prevent entry and exit of flies and other disease-carrying pests, enable safe and appropriate treatment and/or removal of human waste, accompanied by appropriate health and hygiene education.

## DESIGNING AND CONSTRUCTING THE CENTRE

Sanitation exhibits demonstrated at the centre can be divided into three areas; namely:

- The general section which provides a platform for exhibiting posters
- The dry sanitation technologies exhibiting all the technologies that are used to dispose human waste without the use of water as a carrier (Mema, 2009)
- The wet sanitation technologies platform exhibiting wet sanitation technologies which use water to transport human waste.

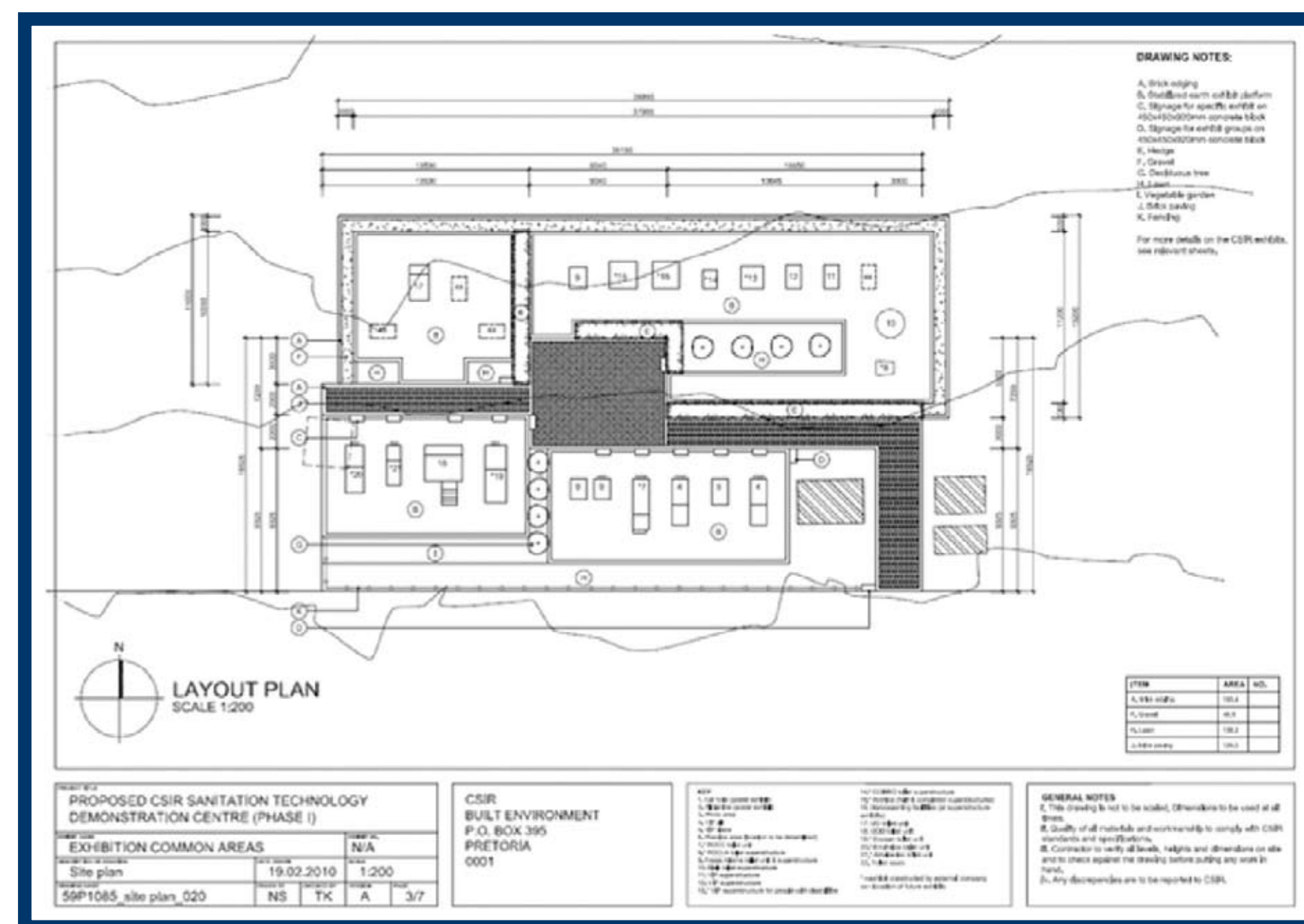


Figure 2: Layout plan of the Sanitation Technology Demonstration Centre

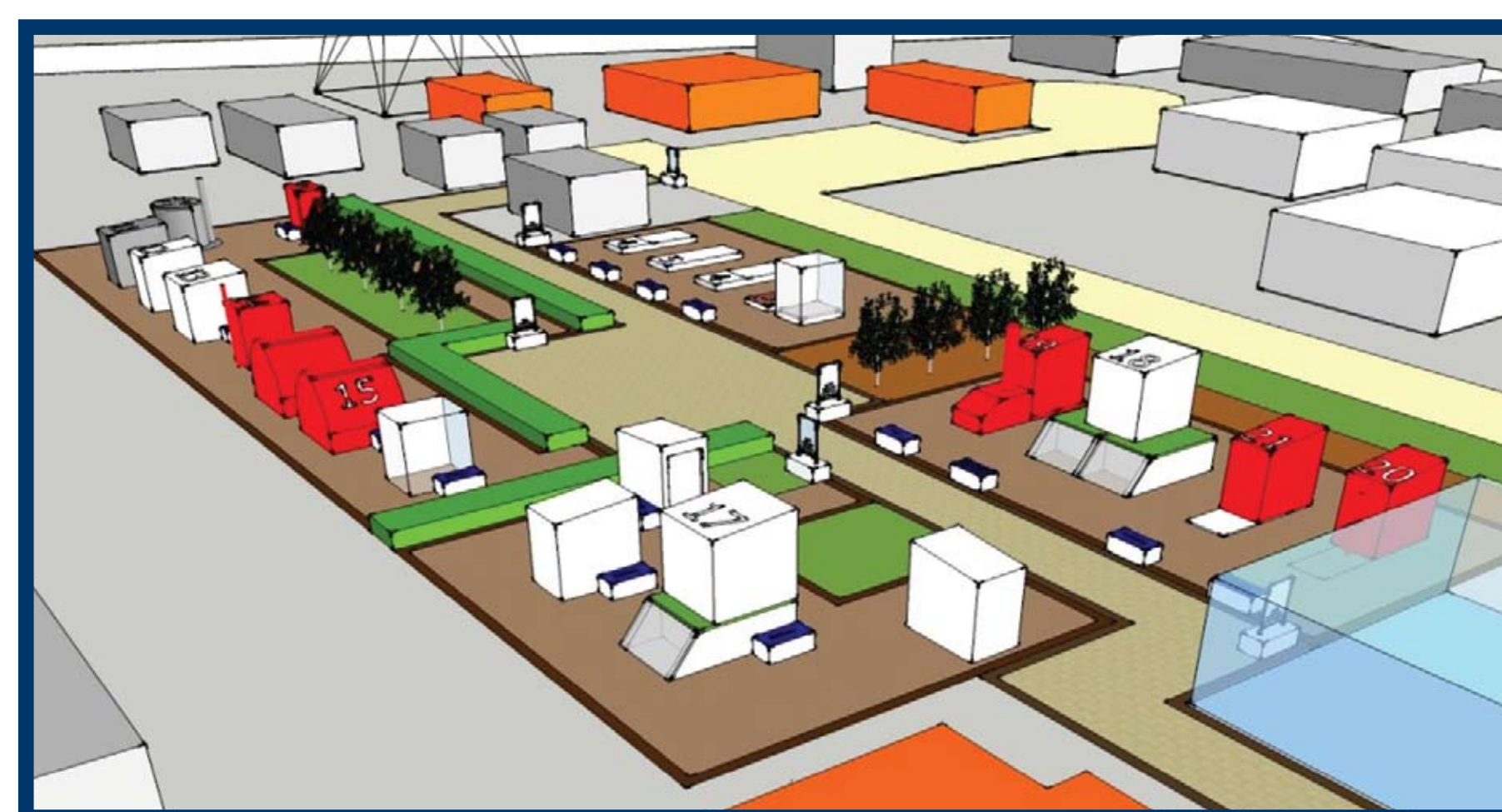


Figure 3: Image showing the north-western perspective of the initial design layout of the Sanitation Technology Demonstration Centre



Figure 4: Western view of the facility

## CREATING AWARENESS

The Sanitation Technology Demonstration Centre is intended to create awareness through proper communication of information about sanitation technologies. It is also expected to have an impact on perceptions about sanitation technologies and in decision making regarding selection of sanitation technology options for implementation in different areas and contexts in South Africa.

### • Communication

A process of sharing information with all stakeholders showing an interest in the centre will be implemented and promoted through flyers, brochures and the provision of other information material at the centre.

### • Perceptions

The centre will provide all role players with a visual understanding of available sanitation technologies that could be implemented as an in-house alternative to waterborne sanitation systems.

The centre will be a platform for research, innovation and cooperation in sanitation technologies.



### • Decision-making

The centre will assist, through sharing of information and creating awareness about various sanitation technologies, communities and decision makers to make informed choices and decisions regarding appropriate sanitation technology options for service delivery.

## CONCLUSION

The knowledge transferred at the *Sanitation Technology Demonstration Centre* about various sanitation technologies is important in the decision making processes regarding provision of adequate sanitation services to communities. As a result of information sharing at the centre, the stakeholders would be able to choose technologies that could be understood and maintained easily by the users with minimal effort.

## REFERENCES

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