

# A legacy beyond steel and mortar

The Berg Water Project

Franschhoek



**water & forestry**

Department:  
Water Affairs and Forestry  
REPUBLIC OF SOUTH AFRICA



THIS CITY WORKS FOR YOU



A new word for water



## The Department of Water Affairs & Forestry

### A symbol of national pride

"As the largest dam to be completed in South Africa since the democratic government and administration came to power in 1994, it is a symbol of national pride. For the first time special measures were applied in support of the strategic objectives of Government to maximize the opportunities for employment of local communities and to provide them preferential access to opportunities to provide the necessary services and goods to successfully complete the project.

The project leaves behind a legacy that will continue to positively impact on the lives of the local people for many years to come."

*Willie Croucamp, Chief Director: Infrastructure Development  
Department of Water Affairs and Forestry*



## The City of Cape Town

### A monument of trendsetting achievements

"The Berg Water Project is the largest water supply scheme to be completed in recent times to benefit the City of Cape Town. The planning and implementation introduced noteworthy achievements such as the preservation of the ecological reserve, empowerment of local communities by sourcing skills and services locally and the forging of public partnerships.

It is indeed historical as it is the first project of its kind to be completed since the advent of our new democracy in 1994. It will serve as a monument of these remarkable trendsetting achievements and to the endeavours of all those who contributed to its completion."

*Farouk Robertson, Communication Officer  
Water and Sanitation Department, City Of Cape Town*



## The legacy

With the Berg Water Project – a R1,5 billion legacy that augments the supply of water to the City of Cape Town by 18 percent – the Trans-Caledon Tunnel Authority (TCTA) has left a legacy for future generations, long after the last shovel of concrete set.

In addition to visible proof of a formidable public-public partnership between the Department of Water Affairs and Forestry, the City of Cape Town and the TCTA, a sterling partnership with the local community has been cemented.



Whilst the benefits of the project are clear for all to see, the TCTA ensured that its legacy of being a responsible corporate citizen remains top of mind for the people affected most - the people of the valley. A sustainable utilisation plan is in place to maximise local economic development. It entails a public process to develop a planning framework that will promote optimal use of the state land surrounding the dam. The plan ensures that the TCTA's and the contractors' pullout from the Franschhoek Valley is adequately planned and managed.

It also identifies potential impacts resulting from the pullout and will develop appropriate mitigation measures - both negative and positive. With all of this in place, care is taken to ensure that all the post-construction impacts are adequately addressed.

Whilst the Berg Water Project is a legacy cast in steel and mortar for generations to see, the TCTA's commitment to leaving a legacy of a caring and responsible partner will hopefully remain in the hearts and minds of the people of the valley for much longer.



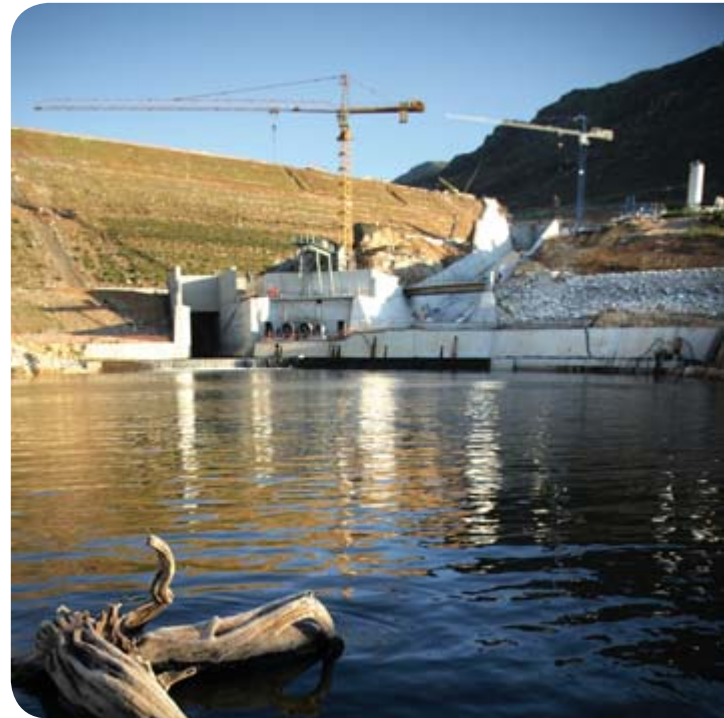
## The construction

Construction on the project started in 2004 and was completed in 2007 – on time and within budget. It consists of -

- the Berg River Dam with a gross capacity of 130 million m<sup>3</sup>
- a supplement scheme including
  - a diversion weir across the Berg River
  - a four hectare balancing dam
  - a pump station
  - a 12km pipeline infrastructure

The dam is located in the upper reaches of the Berg River near Franschhoek. Its measurements are:

- Full supply level - 250m above sea level
- Surface area - 488ha
- Volume rockfill - 3,3 million m<sup>3</sup>
- Gross storage capacity - 130 million m<sup>3</sup>
- Net storage capacity - 129,4 million m<sup>3</sup>
- Maximum dam height - 63m (70m including foundation)
- Length of dam wall - 929m
- Multi-level inlet tower - 63m



# The Trans-Caledon Tunnel Authority

"We, the Trans-Caledon Tunnel Authority, can meet the future needs of South Africa's bulk water infrastructure, including dams, pipelines and pumping stations."

*James Ndlovu, Chief Executive Officer*

Established in 1986, the Trans-Caledon Tunnel Authority (TCTA) is a specialised liability management body tasked to fund and establish raw bulk water infrastructure in South Africa.

This entails a multi-disciplinary function that starts with funding and risk management and ends with managing the engineering, construction and environmental components of a project.

A professional organisation of international repute, the TCTA also plays an important role as an advisor in the water sector in terms of project initiation, restructuring of treasury activities and the review of water tariffing methodologies.

Its flagship projects include the Lesotho Highlands Water Project, the Vaal River Eastern Subsystem Augmentation Project which delivers water to Sasol and the mothballed and new Eskom power stations in Mpumalanga and the Berg Water Project.

Other projects in the offing are the Mooi-Mgeni Transfer Scheme in the KwaZulu-Natal midlands, the Olifants River Water Resource Development Project and the Komati Water Scheme Augmentation Project.

## The employment opportunities

The Berg Water Project is visible proof, not only of a formidable public-public partnership between the Department of Water Affairs and Forestry, the City of Cape Town and the TCTA, but also of a sterling partnership with the local community.

From the outset the TCTA was adamant that the project should promote community self-empowerment, positive self-image and capacity building. The authority facilitated relationship building within the community and empowered it to be involved in community projects, facilities and infrastructural development. Most of all it managed to involve the community and its leaders in an environment of values partnering,

collaboration and shared efforts.

Whilst the TCTA's involvement is something of the past, as a socially responsible organisation, it ensured that the project initiatives that benefit the local community, remain.

The employment information desk ensured that from the start of construction in 2004, nearly 3 400 jobs were created and construction related skills were provided to over 480 local people.

The TCTA awarded Working for Water a R21 million contract to clear all alien vegetation from the Assegaibos area, which includes the Berg River Dam and surrounding areas. The contract runs until 2012 and to date more than 1 400 people have been trained through the programme.

The TCTA is committed to continuing its legacy built up during the development of this major landmark. The exit strategy ensured the continued availability of the employment information desk as an asset and resource to the local community. The desk's database continues to operate through partnerships with other businesses and organisations in the region.

## The funding

The long-term funding for the project is provided by -

- Development Bank of Southern Africa - R500 million
- European Investment Bank - R800 million, the single biggest loan signed between the bank and a South African entity to date
- ABSA - R300 million

Innovative processes ensured compliance and project sustainability. The project maintained its excellent Fitch credit rating of ZAF AA+ and the project debt will be repaid by 2028 from revenue generated from the sale of water to the City of Cape Town.





## The contracts

Various contractors were involved in building the entire project.

### **Engineering, design and supervision contract**

Berg River Consultants comprising of Goba, Knight Piesold and Ninham Shand handled the consultancy services for the design and construction supervision of all construction contracts.

### **Construction contracts**

- **The dam contract**

The Berg River Project Joint Venture, consisting of Grinaker-LTA, Group Five, WBHO and Western Cape Empowerment Contractors handled the R550 million construction contract.

- **The supplement scheme contracts**

- ~ **Civil works**

The R219 million contract was awarded to the construction division of the Department of Water Affairs and Forestry.

- ~ **Electrical and mechanical works**

The R59 million contract was awarded to Sulzer Pumps South Africa.

- ~ **Construction of pipelines**

The R105 million contract was awarded to Cycad Pipelines for the supply and construction of the 12km pipelines.

- **The infrastructure contracts**

- ~ Power Donico for 40 houses - R5,1 million

- ~ Bright Idea Project 632 for 20 houses - R2,5 million

- ~ Bright Idea Project 611 for 20 houses - R2,7 million

- ~ Exeo Khokela for outfall sewer - R3,7 million

- ~ Department of Water Affairs and Forestry Construction for access road - R18,2 million

- ~ Department of Water Affairs and Forestry Construction for village services - R9,8 million



## The village

The La Motte Village, worth some R30 million, provided 80 houses for contractors involved in the project.

As a community project, the village was handed to the Municipality of Stellenbosch to sell at cost to local citizens in need of entry level accommodation. The profits from the sale will go into a revolving fund for further housing development in the area.

## The environment

The Berg Water Project is an international showcase of integrated planning, design and implementation, maintaining a desired level of ecosystem functioning of the Berg River.

It was the first major project to be implemented following the changes to the National Water Act in South Africa and the release of the decision-making guidelines of the World Commission on Dams.

The Berg River Dam is internationally unique and is one of the first large instream dams in South Africa that is required to make both low and high flow ecological reserve releases. Operations ensure that the releases of low flows and high flows coincide as closely as possible with natural inflows and natural flood events.

The outlet works of the Berg River Dam have been designed to release both low flows and high flows with provision for a peak release of up to 200 m<sup>3</sup> per second, making it the first dam in South Africa where provision is made for flood releases for environmental purposes.

In terms of landscaping, the downstream face of the dam wall, visible from the main road into Franschhoek, has been re-vegetated with indigenous flora. This ensures that the dam and associated structures do not contrast with the surrounding landscape. The Working for Water Programme removed alien vegetation, significantly increasing the amount of water available for both human consumption and use by indigenous plant species.

Compliance to the environmental plan is more than 98 percent.

## The accolades

The Berg Water Project has received no less than three excellence awards

- the Consulting Engineers South Africa's Glenrand MIB Award for Engineering Excellence
- the International Association for Environmental Impact Assessment South Africa's Award for Excellence in Environmental Management in Project Execution
- the South African Institute of Civil Engineering Technical Excellence Award
- Construction World Best Project 2008 public/private partnership





[www.tcta.co.za](http://www.tcta.co.za)



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