**PRESS RELEASE**

Latest blasting techniques for rehabilitation of dam walls

**29 April 2022:** New blasting techniques have been developed specifically to retain the structural stability of dams themselves, with no wasted effort. These projects call for highly controlled, cautious, partial demolition techniques. Therefore [Jet Demolition](http://www.jetdemolition.co.za)’s work on large water-retaining dams are some of the most important projects the specialist contractor has undertaken to date.

Rehabilitation of dam walls usually requires demolition of redundant portions of monolithic blocks and associated concrete structures. Dynamic energy imparted by the demolition process has the potential to cause damage to concrete located just across the demolition boundaries and beyond. While it is essential to avoid damage to remaining concrete, it is also important to carry out the demolition works in a productive and cost-effective manner.

Hence, informed and judicious selection of demolition methods and their application techniques are vital to a controlled and productive project – which is where Jet Demolition’s extensive experience stands it in good stead, explains Contracts Manager **Kate Bester**. “Our work at Hazelmere Dam allowed for the compilation of specific demolition-control guidelines to be developed for dam rehabilitation projects.”

Here a combination of explosive, mechanical, and diamond-cutting methods were employed. It was demonstrated that explosives can be used as the primary method of demolition on dam rehabilitation projects in a safe, productive, and controlled manner, without causing damage to the remaining mass concrete and concrete structures.

Located on the Mdloti River in KwaZulu-Natal, the Hazelmere Dam was built in the 1970s. It was designed originally to accept radial arm gates to raise the Full Supply Level (FSL). However, a subsequent redesign showed that the FSL would be achieved optimally via a Piano Key Weir (PKW).

To clear the way for new construction works, demolition of the existing spillway crest, piers, lintel beam, and bridge decks required the controlled removal of 5 300 m3 of concrete up to 3 m in thickness. The key requirements were to demolish the redundant structures in a safe, rapid, cost-effective, and controlled manner, without residual damage.

The traditional demolition method for projects with large volumes of mass concrete is explosives, with large hydraulic hammers used for the smaller concrete sections and for secondary breakage. Finishing work is typically undertaken by small hydraulic hammers and handheld breakers.

Despite the advances in diamond-cutting technologies, this method is usually not practical nor cost-effective to apply in isolation. The use of drilling and blasting is unrivalled in terms of speed and cost-effectiveness. However, for obvious dam-safety reasons, maintaining the structural integrity of the remaining concrete is a perennial concern when demolition works are carried out on a dam structure, or in nearby rock.

When considering safe blasting vibration levels for a particular project, it is critical to consider the prevailing site conditions and geometrical configurations. “At Hazelmere Dam, our production blasting programme and demolition methods achieved all of these objectives successfully,” concludes Bester.

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“Our work at Hazelmere Dam allowed for the compilation of specific demolition-control guidelines to be developed for dam rehabilitation projects.” – **Kate Bester**, Contracts Manager, Jet Demolition

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**Notes to the Editor**To download hi-res images for this release, please visit <http://media.ngage.co.za> and click the Jet Demolition link to view the company’s press office.

**About Jet Demolition**

Jet Demolition has been undertaking industrial demolition works since 1994, and is the leading, largest, and most technically advanced demolition company in Africa. It offers in-house, full-range demolition services, including advanced mechanical solutions and controlled implosions. It actively pursues ongoing development of skills and equipment suited to the changing needs of the industry.

Jet Demolition is a technically based company, with various staff members holding MSc, BSc, and BTech Degrees, as well as National Diplomas, in various engineering fields. This expertise gives it the technical foundation to successfully engineer solutions for large and complex demolition projects, and furthermore fuels its drive to deliver quality projects safely. Jet Demolition strives to offer its clients innovative and technical solutions to demanding demolition challenges.

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