

**Celebrate
Water**

Our past, our future

1976

40 years of Hinze Dam

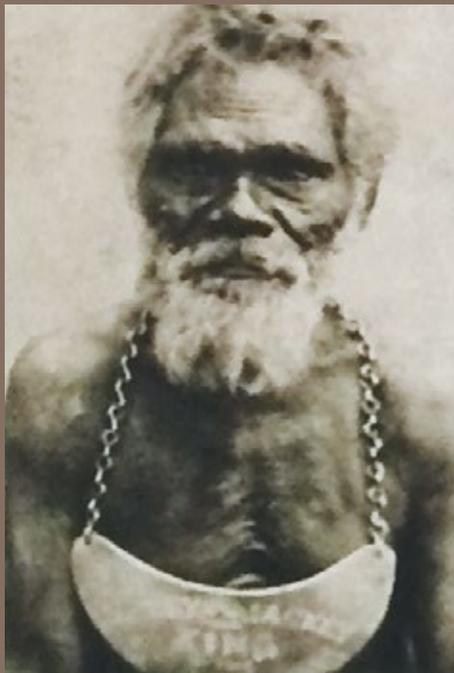
2016

A CELEBRATION of Hinze Dam



Media Partner





Jackey Jackey, shortly before his death about 1901. Born in the early 1800s, Jackey Jackey was an Aboriginal leader in the Yugambeh language region.

Hinze Dam is a culturally significant site for Aboriginal people. The Yugambeh people from the Yugambeh Language Region are the traditional custodians of the Gold Coast and Hinterland and have lived in the area for at least 20,000 years.

Before the Hinze Dam Stage 3 raising, Eastern Yugambeh Limited, a company representing the Yugambeh People's cultural heritage, conducted a cultural heritage survey.

The survey identified at least 24 Aboriginal sites and discovered 66 stone artefacts. Based on the finds, a further assessment was done the following year by a field team that included technical advisors and traditional owners. An excavation of 33 archaeological test pits uncovered a further 844 stone artefacts.

Tangible and intangible Aboriginal cultural heritage values remain within the Hinze Dam estate, on land and beneath the dam's water.

When non-Aboriginal families arrived in Advancetown in the mid-1800s, ownership of the land became the cause of clashes between the two cultures.

While Aboriginal people were accustomed to sharing the land, some of the settlers were not, with farmers clearing and fencing off native forest, destroying the habitats of local plants and animals that were food for Aboriginal people.

Some of the settlers and Aboriginal people were friendly towards each other and shared languages and skills. Settlers used an Aboriginal technique of layering broad sheets of bark roofing on their slab huts. Aboriginal men joined timber-getting teams.

Aboriginal women exchanged bush food and cooking tips with settler women. Children mixed and played together.

Aboriginal ties to the region remain strong and cultural knowledge and languages continue to be gathered, preserved and passed on.

The three prominent rocky outcrops on the eastern side of the Numinbah Valley were named by the traditional owners. The name Kundohkulli, which means 'rock like a boat here' was given to the outcrop now known as Page's Pinnacle, located on the southern boundary of the Hinze Dam estate.

The Nerang River, which flows through the Hinze Dam catchment, is itself named from a local Aboriginal dialect word, Neerung, meaning 'shovel-nosed shark'.



About Hinze

Hinze Dam is built across the Nerang River. It was originally constructed in 1976 (stage 1), raised in 1989 (stage 2) and significantly upgraded in 2011.

Hinze Dam is the main drinking water supply for the Gold Coast. The most recent upgrade saw the wall raised by 15 metres, doubling the dam's capacity and providing increased water security and flood mitigation.

It is an un-gated dam, meaning that when it reaches 100 per cent capacity, water flows over the spillway and safely out of the dam.

The Hinze Dam crest is 108.5 metres above sea level – the highest clay core rock dam in Queensland. During the stage 3 upgrade, a team of 300 workers moved around 5 million tonnes of local greywacke rock and half a million tonnes of local clay to make the dam wall 15 metres higher. Stage 1 of Hinze Dam flooded in the village of Advancetown. In true Australian style, the famous Advancetown pub was relocated before the town disappeared under water. Stage 2 began during one of the worst droughts in the region, but work was interrupted by heavy rain.

It was a case of *déjà vu* during Stage 3, with South East Queensland again in the grip of severe drought. But as soon as building started, the rain began falling. By June 2009, the dam was full and water had flowed over the partially built spillway five times. As well as raising the wall, the Stage 3 upgrade involved a new saddle dam to the west, and an extension of the existing saddle dam to the east. A saddle dam is built in a low point in the ridgeline surrounding a dam so more water can be stored and none can escape through the low point. Imagine where you put the saddle on a horse – that's the typical shape of a low point in the surrounding ridges where saddle dams are built. The main embankment for Hinze Dam runs from the Visitor Centre to the hill on other side – if you go 'round the corner' a bit, there is a low point in the ridge line, and a saddle dam was built in 1989 Stage 2 upgrade of the dam. In the Stage 3 upgrade, the saddle dam was extended and runs along the ridge line into the surrounding hills.



Foreword



The Hon Mark Bailey, MP
Minister for Main Roads, Road Safety and Ports,
Minister for Energy, Biofuels and Water Supply

Hinze Dam has been a central part of Gold Coast life for the past 40 years, growing alongside the region – two upgrades have ensured the dam has kept pace with the Gold Coast’s rapid growth.

Population growth and climate variability mean effectively managing water supplies is more important than ever. By looking back at how our water storages came into being, we can learn valuable lessons to inform our plan for the future.

The Millennium Drought was the catalyst for change in water storage and planning. By its end, South East Queensland had a network of diverse

water supply sources that could be operated across the region in an integrated way. The South East Queensland Water Grid, which moves water around the region to where it is needed, helps us manage this most precious resource and provides us with greater water security than ever before. The people of the Gold Coast can be justifiably proud of the role Hinze Dam plays in helping their region continue to grow and prosper.

I invite you all to Celebrate Water – a look back at the past, with an eye cast towards the future.



**Tom Tate,
Mayor, City of
Gold Coast**

Hinze Dam is an integral element underpinning Gold Coast's quality of life. Providing a safe and reliable supply of clean drinking water, Hinze Dam has sustained Australia's sixth-largest city for the past 40 years and enables its continuing strong growth into the future.

It is doubtful those who originally dreamed this dam into being could ever have envisaged its size and importance today. In the 1960s engineers, planners and other specialists conducted an array of feasibility and design studies that led to creation of Advancetown Dam in 1976.



**Dan Hunt,
Chairman,
Seqwater**

Water is essential for life. At Seqwater, it's our job to produce safe, secure and reliable water for communities across South East Queensland. We live and work in the communities we serve, and our team is proud to deliver this most essential service.

Compared to today's infrastructure costs, the project's total cost of \$20 million is remarkable as it included land acquisition of the area to be inundated, a trunk main and duplication of the Mudgeeraba Water Treatment Plant, and relocation of the Nerang-Murwillumbah Road.

Then Queensland Premier, Joh Bjelke-Petersen, officially opened the dam on 11 June 1977, accompanied by Minister for Local Government and Main Roads, Russell Hinze. The Minister's family, including grandparents Carl and Johanna Hinze, were pioneers of the Advancetown district and their contribution was recognised by the naming of the dam.

City of Gold Coast is proud to have played a major role in the creation of this wonderful engineering structure that services more than 550,000 Gold Coast residents as well as being a component of an integrated drinking water network for South East Queensland.

It is with pride that we remember how it came to be.

Hinze Dam plays an important role in our South East Queensland Water Grid. It is the region's third largest drinking water storage, providing water to the Gold Coast and beyond. Hinze Dam is also a playground for locals and visitors, offering some great fishing and boating as well as parklands and bush areas enjoyed by walkers, cyclists and horse-riders. Our popular visitor centre tells the story of the dam and how we source, store and supply water to support healthy communities and a prosperous region.

Over its 40 years, the dam has been upgraded to meet the needs of a thriving City of Gold Coast and it has become a Gold Coast icon. As we plan our long-term water future, Hinze Dam will continue to be a key asset.

On behalf of everyone at Seqwater, I welcome you to Celebrate Water at Hinze Dam.

What's in a name?

Cecil Hinze remembers how his father Otto would tell his family their land would make an ideal site for a dam.

"My older brothers would often scoff at the idea," the 91-year-old recalled.

"They would say 'why would anyone want to build a dam here?'"

"As it turned out, my father was right, though I doubt he pictured a dam as big as the one that was built."

For the first 25 years of his life, Cecil lived with his family on 260 acres of riverside farmland in Advancetown, on the eastern side of the Nerang River.

Most of that land is now under water following the construction in 1976 of a dam that has become the main drinking water supply for the Gold Coast region – Hinze Dam.

That land was first settled in the 1880s by Cecil's grandparents, Carl and Johanna Hinze, after they immigrated to Australia from Germany.

They raised a family and when their children grew older and married, some built their own homes on the property.

"My parents Otto and Mary built a small house, also on the western side of the river. I was the youngest of their seven children," Cecil said.

"My family used to farm corn, potato and pumpkin on the land and owned about 30 dairy cows.

"We grew nearly everything we ate.

"There were also lots of trees, so we would cart timber up the river to the Nerang railway station to transport to the sawmill in Brisbane."

After Cecil married his wife Beryl, the couple moved to Mudgeeraba, where they still live.

Even after moving from the Advancetown farm 67 years ago, Cecil still thinks of it as home and visits the site from time to time. He even celebrated his 90th birthday there.

"After my father died, my mother sold the property in the 1950s and moved to Southport," he said.

"I've watched with fascination as the farm slowly transformed into the dam it is today.

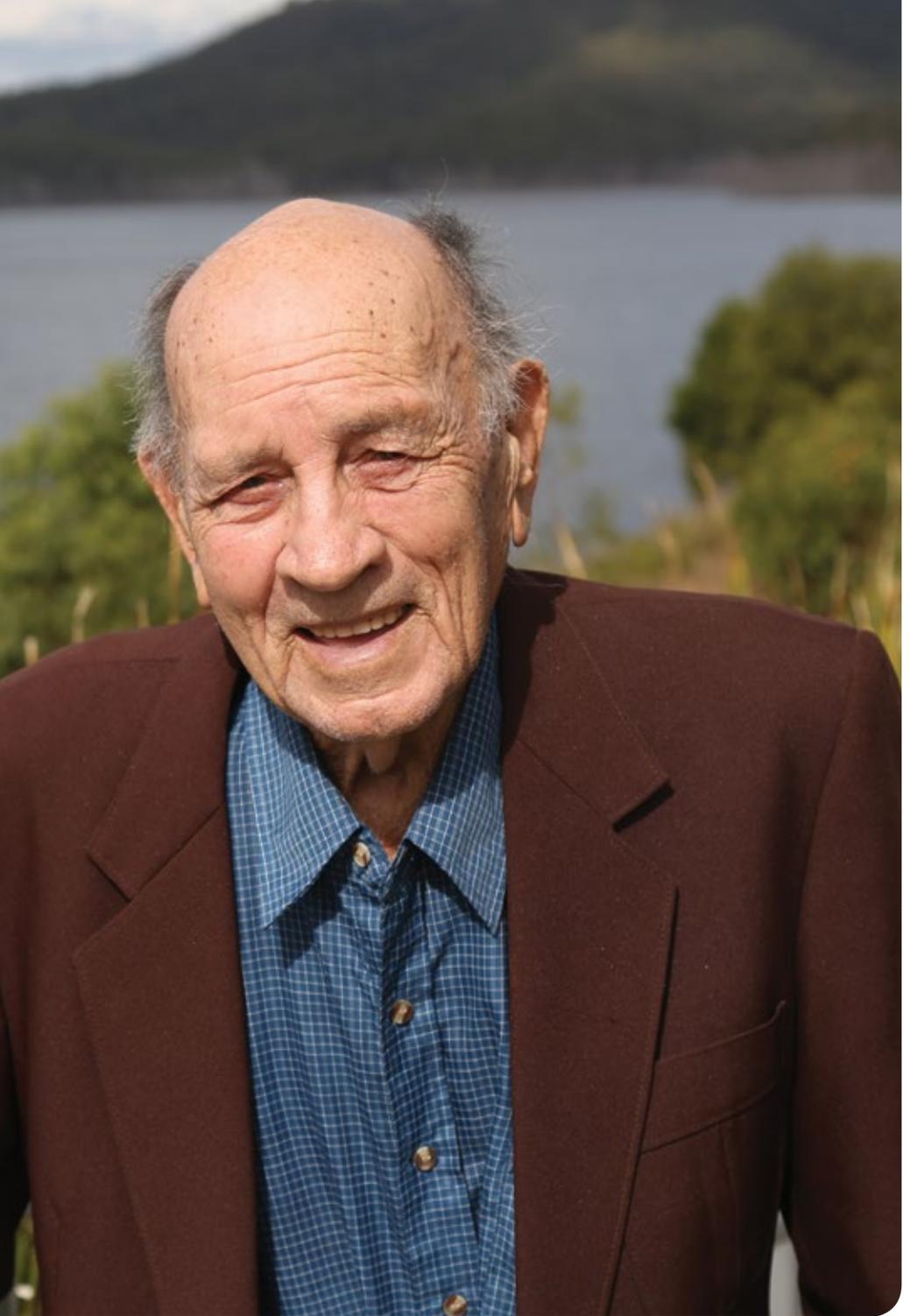
"I sometimes visit the site with my grandchildren and point out where I used to live.

"A mango tree that grew next to the house my father built, is the only part of the property left standing."

As a fitting legacy, the dam was named after Cecil's pioneering grandparents.

Cecil said he was proud to have his family's name connected to something of such importance to the region.

"A lot of people think the dam is named after my cousin, Russ Hinze, who was a Queensland politician at the time of the dam's construction, but in truth it pays tribute to my grandparents," he said.



What lies beneath



You couldn't tell by looking at it, but a lot of interesting family history is buried beneath the waters of Hinze Dam.

Before the site became the main water supply for the Gold Coast region, the land was occupied by several farming families.

When Nerang resident Joan Rudd visits the dam, she still feels a connection.

Joan's father Campbell Duncan was born and raised on a farm which now forms part of the dam wall.

"My grandparents Tom and Sophie Duncan settled on a property in Gilson in 1902 and raised seven children: Gordon, Grace, Rose, Tom Jr, Campbell, Irene and Hazel," Joan said.

"The family worked the farm – a dairy cultivation – until 1921. At that time it was decided to shut the farm up and move to Burleigh Heads to make a living with a bakery and carrier service.

"The family returned to the farm, though, after they were impacted by the depression."

The property continued to be farmed by Tom Jr and his wife Doris until it was resumed for the dam.

Joan's older cousin Lurleen Mackey, the daughter of Tom Jr and Doris, has fond memories of living on the farm.

"I enjoyed swimming in big waterholes and exploring the property," Lurleen said. "There was an old, empty slab hut that my grandparents built when they first arrived that I used to visit."

Another of Joan's cousins, Annis Steele – the daughter of Grace Duncan and Doug McMillan – spent her first 18 years living in a house on a hill that overlooked the meeting of the Big Nerang and Little Nerang Rivers.

The property has now been engulfed by the dam's water reservoir. "During a flood event, we'd sit on the verandah and watch the rain pour down and the water rise until both rivers broke their banks and covered the flat with rushing water," Annis said.

"We would see trees, logs and sometimes cattle floating by,"



The Duncan family with friends at their property in Gilson.

As well as the Duncans and the McMillans, other pioneering families who lived in the area included the Mills, Hinze, Faust, Batten, Powell, Hinde, Holmes, Schoors, Kennedy and Guinea clans.

Between the families, different animals were farmed and different crops were grown including cattle, pigs, sweet potatoes, bananas and wine grapes.

“The valley had a school, a hotel – even a tennis court on the red hill at the Holmes’ property,” Joan said.

“The families worked hard and were largely self-sustaining; it was a productive and fertile little valley.”

Now the area is productive in another way – supplying water for the region.

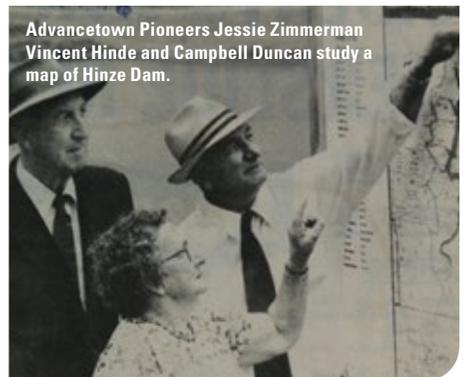
When plans to build the dam were announced, Gold Coast City Council bought the land from residents living on the site, but some were unhappy about leaving.

Shayle Andrews, the daughter of Laurie and Iris

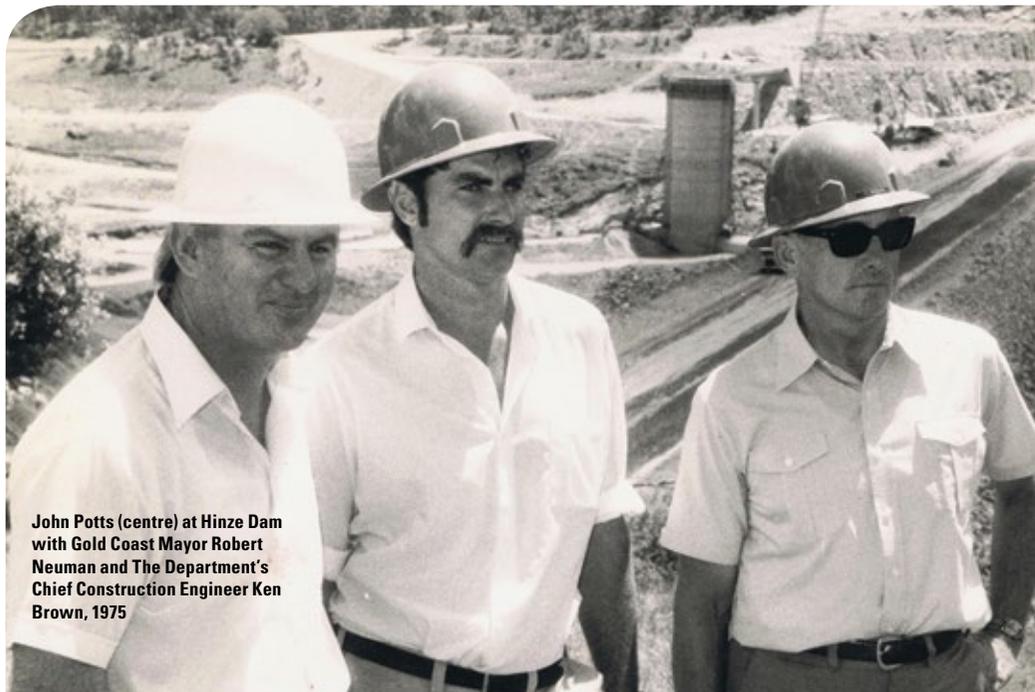
Hinde, remembers how her parents fought the tide to relocate as they did not want to leave the home they raised their family in.

“After my family settled, it took years for them to readjust to their new surroundings,” Shayle said.

Even though little remains to show a community once existed at Hinze Dam, its history lives on through the passing down of stories and the collection of memorabilia and photos at places like the Gold Coast Hinterland Heritage Museum.



Advantetown Pioneers Jessie Zimmerman, Vincent Hinde and Campbell Duncan study a map of Hinze Dam.



John Potts (centre) at Hinze Dam with Gold Coast Mayor Robert Neuman and The Department's Chief Construction Engineer Ken Brown, 1975



**Construction work on Hinze Dam 1975
© Michael Bedward. Photo supplied by City of Gold Coast Libraries Local Studies Collection**

Brains and brawn



In a career that has seen him build dams all over the world, engineer John Potts still considers working on Hinze Dam as some of the most memorable years of his life.

“The dam was designed and constructed by the then Department of Local Government’s Town Water Supply and Sewerage Branch. The Branch was later absorbed into the Queensland Water Resources Commission,” John said.

“Jim Turnbull was the Chief Designing Engineer and the driving force behind the dam. He had a close working relationship with the client, the Gold Coast City Council.

“I was chuffed when the Department’s Chief Construction Engineer Ken Brown asked me to be the Resident Engineer for what turned out to be the first stage of a very large dam.”

John was 30 at that time in 1973.

“Prior to the job, I had only worked on smaller dams, weirs and sewerage schemes – it was a huge challenge,” he said.

John said the dam was designed by Ron Willis and attributed the success of the project to the pair’s great working relationship.

“Ron was very conscientious,” John recalled.

“He recorded everything in copperplate handwriting style, on duplicate computation sheets.

“I used to joke to him that he was the brains of the outfit and I was the brawn.”

The main contract was let to Davis Contractors with the Hornibrook Group awarded the concrete subcontract – both were divisions of the then Wood Hall Group. Work began in January 1974.

“The Gold Coast City Council built houses for us on the dam site near Advancetown Village, and I lived there with my wife Peggy and our two young children during the two years of construction,” John said. “The other houses were occupied by my fellow engineers and their families which made for a pleasant social group.”

But no sooner had work begun when the project suffered a major setback in the form of the 1974 floods – the largest flood in both height and volume recorded to that date in the Nerang River. “We had another flood of similar height less than two months later in March and another smaller one in 1975, when the dam embankment was partly completed,” Mr Potts said. “The persistent rainfall at the dam site kept me awake at nights.”

John said the far-sightedness of the Department and the Council allowed his crew to build in features of the dam which would facilitate its future raising – although few could have predicted the phenomenal rate of the Gold Coast’s growth.

The dam was completed on time in early 1976 with no significant cost overruns.

“I have gone on to be involved in many dam projects in Australia and overseas since then and I’m still building dams at age 73,” he said.

“When I look back at my career though, Hinze Dam is still my most satisfying and enjoyable project. Although I wish I knew then what I do now.”

'It will never fill'

With its water level down to just 25%, what was the point of increasing the capacity of Hinze Dam four-fold? And how was such an enormous dam ever going to fill?

Those were the questions many sceptics asked as plans were drawn up in 1984 to increase the water storage capacity of the Gold Coast hinterland dam from 42,400 million litres to 161,070 million litres.

Five years later, when the Hinze Dam Stage 2 upgrade was completed, the questions were emphatically answered.

It rained heavily over the catchment, and water flooded into the new dam.

"Whether by good planning or an act of God, the Stage 2 dam filled and overflowed within a few months," said Brett Lawrence, the man largely responsible for management of the project.

"While a few design and construction personnel were concerned about how the structure would perform under such a rapid initial loading regime, it performed exactly as expected," Brett said, the pride still apparent more than 30 years later.

Brett was the Gold Coast City Council's Project Engineer for the upgrade, working with a consortium of engineers to design the raised dam and supervise the build.

The consortium was made up of Cardno and Davies, Gibb Australia and Crooks, and Michel Peacock Stewart (Qld), collectively known as 'Damcorp'. Two internationally recognised dam construction experts – J.B. Cooke and I.L. Pinkerton – were contracted to review the design of the dam, the construction progress and quality.



When the design of the raised embankment began, no formal consolidated design, construction and performance reports were available for the Stage 1 dam, which was built in 1976.

“This led to significantly more research effort and site investigations to provide a reliable basis for the design of the raising,” Brett said.

“Following a detailed study, it was determined that a dam with a total rise of about 30.4 metres above the top of Stage 1 could be constructed with safety.

“Whilst the original Stage 1 design concept always allowed for a second stage raising, our

study indicated the dam could be raised to a higher level than previously assessed and it would be more economical to undertake the future raising in two stages, each of about 15m.”

A subsequent decision was made to include an additional flood mitigation provision in the Stage 2 works through a slotted spillway design to limit flows in lower return frequency flood events.

Brett, who now works as the Asset Solutions Manager for Gold Coast Water, said construction for the Stage 2 upgrade began in July 1986 and was completed two and a half years later.

GCC councillors and officers 1989. Photo supplied by City of Gold Coast Libraries Local Studies Collection



A dam good career



Building a dam is a mammoth job, and it takes a lot of people. But one person who knows Hinze Dam better than most is Dam Operator Darryl Raggatt.

Darryl has spent the past 40 years in the water industry, with most of that time at Hinze. He started work at the dam in 1985, eight years after it was built, and has seen the dam undergo two major upgrades in 1989 and 2011.

“I started out as a plumber,” Darryl said.

“Eventually I went from plumbing to working in sewage treatment plants.”

“Then a job opportunity to be a ranger at Hinze Dam came up. I thought to myself, ‘working with water has to be better than working with sewage.’”

For 28 years, Darryl lived in one of three houses on the dam site.

“Back then, Hinze Dam was also known as Advancetown Lake and was owned by the Gold Coast City Council,” he said.

“The dam was a great environment to live and work at. I had spectacular water views each day and there were no neighbours. Since the dam was essentially my backyard, I took a lot of pride in keeping it clean and safe.”

“I ended up becoming mates with a lot of people in the area over the years – many who I remain friends with to this day.”

When Stage 2 of the dam was completed in 1989, Darryl’s list of work duties was upgraded as well.

“After the upgrade, someone was needed to do all the gauge house readings and dam safety processes and other operational tasks, which I took on in addition to my ranger duties,” he said.

“It helped me in the long run, because when Seqwater took over in 2008, the authority offered to keep me on because of my operational experience.”

Darryl described his time in the water industry and at Hinze Dam as “a great journey”.

“I loved being a ranger at Hinze because the job allowed me to do something different each day and interact with people.”

“One of the lead rangers at Hinze, Laurie Fairall, would say it took me three days to complete a day’s work because of the time I spent speaking with the public.

“I considered myself a good PR man for the dam, though.”

“When the dam upgrades took place, a lot of people were disappointed that it meant giving up a lot of recreation space, but as I have told them, a dam is primarily a water resource rather than a place to play.

“It will be interesting to see how Hinze Dam changes in the decades to come.

“There are some great people working at Seqwater these days, like Recreation and Catchment Operations Coordinator Craig Duncan and Joe Meissner, our manager in the Southern Region.”

“As far as I’m concerned, it’s certainly heading in the right direction.”



Water for life **have your say**

As we reflect on 40 years of Hinze Dam, it is also a good time to look ahead. Seqwater is working on our 30-year *Water for life* plan for South East Queensland's drinking water supply. This long-term plan will provide enough water to sustain household and business needs for our growing region.

In South East Queensland we live in a climate of extremes – from times of drought to floods – and we need to be ready to adjust our water use and management when conditions change.

The first version of Water Security Program is the starting point for planning water security for our region. We have time to choose the right water future for South East Queenslanders and there are lots of ways for you to have your say about the different water options and how we decide the right water future for our region.

Read about our water security program and register to get involved at www.yourseqwater.com.au



Play it safe at our dams, lakes and parks

Hinze Dam is a fantastic recreational destination, featuring lakeside parks, trails for walking, biking and horse-riding, an area for pet owners to walk their dogs on leash and the Peter Hallinan Mountain Bike Precinct. Enjoy your time at Hinze and remember to play it safe as our rangers can't be everywhere to help you. Here's how you can play it safe:

- Be prepared for your activity with the right equipment and safety gear, such as lifejackets and a first aid kit.
- Check our recreation and safety notices at www.seqwater.com.au before you leave for the latest information on conditions and closures.
- Check the latest weather at www.bom.gov.au

