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Opening Up the Channels

Irrigation is the very basis of our civilisation. Once nomadic people realised that they could grow crops and domesticate animals, they could give up their life of hunting and gathering and attend to 'civilised' activities such as commerce, law, politics, war (if that's different). Slogans like 'NO DAMS', which appear to occupy high moral ground, actually demand a return to primitive conditions.

Since colonisation, governments in Australia have always been aware of the vastness of the continent, the smallness of the population and the perceived external threat from the overpopulated regions to the north. 'Populate or perish' has been a common catchcry, persisting to this day. Australia, from the time it was solely a prison to modern times, has been concerned with feeding and clothing its citizens and with exporting its agricultural produce overseas. And not only did these enterprises generate wealth, they provided a useful occupation for the residents.

Social policies have been devised to provide useful employment for the populace at the same time as generating wealth. Most of these related to opening up the continent and developing the land. Obvious examples are the Soldier Settlements and the Brigalow Scheme.

Early in Australia's European history, it was realised that trying to grow crops under conditions of erratic rainfall was 'hit and miss' and gradually irrigation was introduced wherever possible. Individuals could not achieve economies of scale, and before long Governments became involved for good social reasons. Victoria was the first State to invest public monies in irrigation with the creation of a major Irrigation Area based on Goulburn Weir. Its designer, Stuart Murray¹, after whom the main irrigation canal was

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Theodore Hotel in the early days

later named, became the first Commissioner of the State Rivers and Water Supply Commission at the tender age of 68.²

Queensland was somewhat tardy in getting involved, with the private sector leading the way, before the Government commenced the Inkerman Scheme in 1917. We have seen in Chapter 2 that the Government's decision to create the Theodore Irrigation Area led directly to the formation of the first Irrigation and Water Supply Commission.

Thus, throughout its history, the Commission has been concerned not only with the provision of water supply (headworks), but also with the creation of farms and the distribution of water to them. To be technical just for a moment, the *Irrigation Act* allowed the creation of Irrigation Areas and Irrigation Projects. In the former, the State sometimes acquired land, subdivided it into farms, provided a water supply and drainage and disposed of the farms through auction, sale or ballot. In the latter, the State merely undertook to supply water (usually through release to a river) to properties within a designated area. All properties within the designated area were included and the owners were required to pay the prescribed rates. There was no subdivision and usually no reticulation.

The Commission has designed and constructed eight Irrigation Areas, an undertaking of no small magnitude. In some cases the design was undertaken in Head Office while in other areas, because the task required the assemblage of a large

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team of designers and because local input was highly desirable, the vast amount of the activity was undertaken on the spot. In those cases Head Office provided technical support and specialist design capability.

The eight Irrigation Areas designed by the Commission are Theodore, Mareeba–Dimbulah, St George, Bundaberg, Emerald, Eton, Lower Mary and Burdekin River. Later sections of this chapter will deal with the Irrigation Areas that were designed locally.

Irrigation Branch was also responsible for rural water supply schemes, providing stock and domestic supplies to groups of graziers, usually managed by locally elected Boards. Drainage schemes also fell within the Branch's jurisdiction. One could philosophically reflect that yesterday's swamp is today's environmentally sensitive wetland!

Fred Haigh was recruited from Victoria in 1948 as Senior Irrigation Engineer, bringing with him extensive knowledge of irrigation area design. Queensland adopted many of the design assumptions used in Victoria, which is certainly better than reinventing the wheel. Fred Haigh did not remain long in the post. Tom Lang certainly found him a more congenial workmate than Parkinson, with the result that Fred was appointed Deputy Chief Engineer and then Assistant Commissioner and Parkie was laterally-arabesqued to Director of Stock Routes Construction.

Gordon McDowell was recruited from the Water Conservation and Irrigation Commission (NSW) and appointed as Executive Engineer Irrigation and Rural Water Supply following Fred's elevation. He was promoted to Senior Engineer in 1950 and to Chief in 1954. Bernie Credlin considered that Gordon McDowell was one of the best two engineers he ever worked for because his instructions were clear and adequate for the work to be done.

By 1966, Gordon McDowell had joined the Land Administration Commission and Don Beattie was Senior Engineer and Branch Head, with Stan Ross as his Deputy.

Among the Head Office staff at that time were engineers Bill Day (who shortly after was promoted to Underground Water Branch), Peter Phillips (who transferred to the Co-Ordinator General's Department after a short stint as Acting Regional Engineer Mareeba) and Ernie Melville (a former draftsman who became a specialist irrigation area designer). Ernie had led a fairly dissipated youth before settling down as an exemplary husband and father and had wrapped his motor car round a lamp post (on two separate occasions), breaking both legs.³ He always explained his tendency towards pigeon toes as the result of the doctors putting his feet back on crookedly. Ernie was a devoted collector of jokes which he recorded so cryptically in a little notebook that he couldn't remember them years afterwards. He also became

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a specialist home brewer, resorting to science to improve his product. He later enrolled for a TAFE course in brewing but the class found on Night 1 that he knew more than the lecturer, so he was conscripted into presiding over future sessions. He required each participant to supply two bottles of his own brew and the very happy classes required the sampling and critical analysis of all the contributions! He later became a devotee of croquet, devoting his creative talents to the development of a super mallet.

Like any other design group, Irrigation and Rural Water Supply Branch was very dependent on its drafting section. Stuart Robinson (Supervising Draftsman) and George Jordan (Senior Draftsman) provided extremely strong, no-nonsense leadership. Many was the junior engineer, as well as draftsman, who benefited from their accumulated knowledge and wisdom, not only on technical matters but also on how to keep one's feet firmly on the ground. According to Peter Cannell (and many others), *'Stewie' Robinson was a leading light in the drafting fraternity. He really looked after people in the bush. He didn't beat about the bush, either. If he thought you were bunking out a bit, he'd give you a swift kick in the backside. Stewie was an excellent character; he had a good rapport with everybody. Everyone knew him, and everyone respected him for what he was. He was an excellent tradesman, a good communicator, and he didn't leave you feeling down or anything like that. He always met people with good responses. He recognised good work when there was good work, and he also recognised bad work, and told you so. He was straight-forward and you couldn't ask for anyone better, really, than Stewie.*⁴



Stan Ross

George Jordan was obviously trained in the same school and, together with Stuart, imbued high standards of workmanship and behaviour into their protégés (including trainee engineers!)

In 1973 Don Beattie became Chief Engineer Special Duties and the following year (following Fred Haigh's death), Assistant Commissioner to Frank Learmonth. Stan Ross acted as Chief until his appointment was confirmed. Herbert Stanley Ross joined the Commission as a new Civil Engineering graduate in 1951. During the next four years, he served principally in Head Office, except for three-month terms in each of Clare, Theodore and St George. He then spent virtually 10 years in Mareeba, under Ian Fairweather and then Henry Hannam, involved in investigations, design, operations and maintenance, until Don Best was appointed Operations Engineer.

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In November 1964, Stan transferred back to Head Office as an Acting Executive Engineer to rejoin Irrigation and Rural Water Supply Branch. He was appointed Executive Engineer in 1965, Senior Engineer in 1971 and Chief Engineer in 1974. He was redesignated Director Irrigation Division in 1985.

Stan was recognised as an expert in Irrigation Area design, being a specialist lecturer in the subject at his alma mater, the University of Queensland. He was very active in Institution activities, serving on several committees and writing and presenting four technical papers. He also presented a paper at an Afro-Asian Conference in Manila in 1978. He was a member and later Chairman of the Standards Association committee on reinforced concrete pipes.

Stan was (and still is) a most delightful, generous man and proof that one does not have to be ruthless to achieve high office. Most unfortunately, in 1975, Stan suffered a stroke. Luckily, he made a good recovery and was able to return to work until his retirement in 1988, and has enjoyed good health since.

By one of those ironies on which fate is so keen, Irrigation Branch, which had spawned Operations Branch (see Chapter 10), was absorbed into Operations and Marketing Division under Dave Morwood in 1988. Peter Noonan was effectively the Officer-in-Charge of irrigation area design in Head Office. In 1991, irrigation area design became part of Development Division under Malcolm Pegg, but by then the only Irrigation Area in the design phase was the Burdekin River Irrigation Area (BRIA) and, although there was a nominal Head Office management role, effectively the function was conducted out of Ayr, under Kev Devlin. This has now grown into a consultancy area, undertaking projects way beyond those of the Department. The BRIA was the last to be designed by the Commission. It appears highly likely that it will be the last to be implemented by the Queensland Government, at least in the foreseeable future.

The Bundaberg Irrigation Area (BIA) was designed to provide a supplementary irrigation supply to those cane lands under production in 1970 and to reduce the stress on the aquifers of the area by substituting surface water for some groundwater. The scheme, as approved, included a dam on the Kolan River (Monduran, later renamed Fred Haigh), a dam on the Burnett River (Kalliwa), tidal barrages on the Kolan and Burnett and a system of pump stations, channels and pipelines. Water is delivered to the Burnett system via the Monduran Pump Station and the



Kev Devlin

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Rod Terry with Walla Weir in the background

Gin Gin Main Channel. The water is reticulated through three separate distribution systems – Gooburrum, Woongarra and Isis to about 40,000 hectares of land.⁵

Kalliwa Dam has never been built. As a partial substitute for Kalliwa, Walla Weir was constructed on the Burnett River. Bucca Weir was also constructed on the Kolan River.

Fred Haigh was the one who brought the BIA all together, through a succession of meetings in Bundaberg and Brisbane with the planners and industry developing ideas. Fred personally wrote a lot of the Bundaberg report of 1970.⁶

The Bundaberg District Irrigation Committee had been in place for a number of years, and they had their own lobbyists in Canberra. The result, according to Peter Bevin, was *we had more Prime Ministers and Treasurers through Bundaberg in those days than I've ever seen in my life. They really had them coming through. Ministers Kevin Newman and Reg Schwartz and many others were trotted through and given the two-day tour.*⁷

If a criterion for establishing a local design office for an irrigation area is that the project will be ongoing, then the BIA certainly justified one as the design phase lasted for 20 years. A large number of engineers gained experience there, so there was ultimately a very good network of people throughout the State.⁸ These included Mike McKenna, Paul Mills, Maurice Clewley, Chris Robson, Jim Uhlmann, Steve Schultz, Peter Gilbey, John Albers and Jack Francis. Not all were long-term recruits. Ross Krebs reports *I went to Bundaberg, smashed Peter Bevin's car, and asked to leave a week later.*⁹

Others had more staying power. One day Peter Bevin asked Jim Cook how things were where he was working. According to Jim, he responded, *"I'm getting a transfer.*

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I have a choice of Wivenhoe, Mareeba or Bundaberg.” Peter said, “I’ll have you.” I said, “Hang on, do I get a house?” and he said, “Yeab, there’s a house there.” I said, “Do I get a car?” and he said, “Yeab, there’s a car.” I said, “Do I get a secretary?” and he said, “Yeab, you can share mine.” Little did I know that the office of 56 people all shared the same secretary, and the car was for all the engineers and all the draftsmen.¹⁰ But Jim had a great lifestyle and after about 20 years he had no desire to leave Bundaberg and had to be ‘persuaded’ to move on.

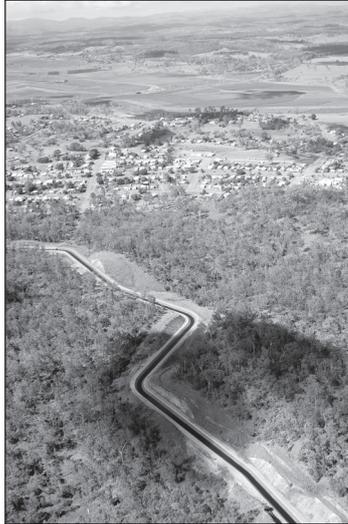


Fred Haigh with Geoff Ward and Ben Anderson at the Monduran dam site

Mike McKenna considers that *Peter Bevin was a wonderful leader. He encouraged us, despite our attempts to divert his attention from time to time. He would come around at ten to five on Fridays and say, “How can we actually be productive for the last ten minutes?” He tried to squeeze every single little bit of enthusiasm and work out of us that he possibly could.*¹¹

Peter Gilbey pestered Bernie Credlin and Don Beattie so much that they eventually let him go to the country in Bundaberg. He joined Jim Uhlmann’s design team in 1973 just as computer-aided design was beginning to take off.¹² The irrigation area design began in the Gooburrum area because the immediate priority was to take people off groundwater where the aquifers were threatened. It still is!¹³ As the works were being constructed by daylabour, *it was a wonderful period of learning and feedback for us as we were actually talking to the people using our designs*, according to Peter. *We went through a period of challenge because some of the structures were quite difficult to construct. Around 1973, inflation really started to bit in Australia and unit rates were just going through the roof. So Peter Bevin challenged us to come up with a new set of structures which would basically do the same as those in Mareeba but would be cheaper. I adapted a little hydraulic plant at the back of a carpenters’ workshop just up the road from our Bundaberg office and with a bit of sand and a bit of plywood we came up with the new types of inlet and outlet structures that you see today.*¹⁴

Peter Gilbey considers his Bundaberg days as formative in many ways. *Peter (Bevin) and Jim (Uhlmann) had enormous confidence in us – I think I was 24 or 25 at the time. They left us to negotiate channel resumptions and to come up with good designs. I think modern managers sometimes forget that trust and integrity breed loyalty and the willingness to go the extra mile.*¹⁵ Not that life was serious all the



Gin Gin Main Channel

time. Ken Heidke recalls *Peter Gilbey used to smoke a pipe. He tapped the remains of his pipe in the waste paper basket and it caught fire. Fortunately, he was able to open the window in the pre-air conditioned days, and throw it out the window.*¹⁶ Perhaps this engendered ideas because *another day, he threatened someone with a fire extinguisher and inverted it too far. Peter Bevin came along the corridor and saw the foam, shook his head and moved on.*¹⁷ Peter Gilbey himself admits *we did naughty things of course, we were all bloody louts at times. Once I put the fire extinguisher onto Adrian Muller and Jimmy Uhlmann because I thought they were overdoing their smokos.*

Paul Mills really appreciated the esprit de corps with *a lot of good social interaction between the families.* He was also very conscious of Peter Bevin's *ability to get beside you so his enthusiasm just rubbed off.* Paul also remembers the day he was told that a tower he had designed and built was leaning. He was worried that he may have skimped on the foundations. But it was near the coastline and the wind had blown everything else crooked – the power poles, the cane and everything else – and his tower was the only thing straight!¹⁸

Others found it less congenial. Kev Devlin transferred to Bundaberg after Emerald was finished, but never felt that he fitted in. He thinks *the thing that summed it up for me was that after I'd been there about 12 months I was away on holidays for about a month, and I rang up and I got out only the first couple of words, "Kev Devlin," and the girl said, "Hang on a minute." There was silence on the phone for a few minutes, and then she came back and said, "We don't think he's here." I felt like saying, "You idiot! This is Kev Devlin. I haven't been there for three weeks."*¹⁹

The Emerald Irrigation Area (EIA) is very different from the BIA. In the first instance, the BIA was designed to serve the existing farms – a cause of future problems because some of the Bundaberg farms are no longer of sufficient size to constitute an economic unit. However, there really was no practical alternative. By contrast, the Commission resumed land to create the EIA, and sold (or balloted) the farms together with a water allocation. In the second place, whilst much of the BIA is relatively flat, according to Doug Flanders, *we hadn't had an irrigation area like Emerald before with its soils sloping at about 6%, which caused problems for erosion on farms. We had to design a system that could cope with slope, and we worked out it had to go down slope, not across. We had key charts of catchment area, slopes and contours. We had to put the contour banks in at five to ten metre intervals to avoid soil erosion. There were a lot of problems with it.*²⁰

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The EIA was approved in 1969, and Peter Bevin was transferred there to gain experience in irrigation area design. He stayed for about four years, during which the left bank (Selma) system was designed and the right bank (Weemah) system commenced.²¹ Among the design staff were Trevor Fuelling (whose resignation led to Doug Flanders' move to the area), Wilton Boyd, Neal Ashkanasy, Peter Hoey and Ian Fox. Trevor Sleep was running the survey side. When Peter Bevin returned to Bundaberg in 1972 to commence the BIA design, Jim Ole replaced him as District Engineer.²²

Following transfers and the resignations of both Peter Hoey and Ian Fox, the Area was very short of engineers. Kevin Devlin volunteered for what Stan Ross told him would be *about a year's work*. He stayed four and a half years, during which time he did most of the design on the right bank.²³ Ron McMahon came to Emerald as the Operations Engineer and he and Kev helped each other to improve the system.

In 1975, Bill Souter applied for the vacant District Engineer's job in Emerald. In due course, he received a letter from Personnel informing him that his application had been unsuccessful. Shortly after, he received a letter to say his application had been successful and he transferred to Emerald, remaining in the chair until 1980. Kev Devlin considers the time with Bill Souter as *a wonderful period of my life. Bill's more or less opening line when you met him was to ask you what you sailed or who you opened for, and I couldn't answer either of those questions, so Bill had me pegged down for a long time. Of all the people I've worked for he'd rank very*



Cotton harvesting in the Emerald Irrigation Area

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*highly. You couldn't hope for a more encouraging boss and a more formative boss, somebody whose attitude you picked up by osmosis. Shortly afterwards, I built myself a sailboat. Bill taught me to sail and I crewed for him for years. That was another golden period.*²⁴

When Bill Souter arrived, the Irrigation Area was not thriving. *People had been growing unprofitable crops for about three years – wheat and sunflowers. We had cockies whinging on the television about the waste of government money. So it was a pretty bad scene. We'd created some farms but we hadn't completed the distribution systems so the cockies couldn't get enough water. Then they started growing cotton. The payments for cotton were pretty erratic in those days – they'd plant on high prices and get paid on low prices – that sort of stuff. So the water payments were even more erratic.*²⁵

The take-up of cotton was somewhat sporadic, and the economics of the scheme remained shaky. The review of the Water Services Program of DPI conducted in 1992 carried out a retrospective economic analysis that showed that the scheme had moved into positive returns to the State only in the late 1980s.²⁶ Since then, of course, it has performed very strongly. This result would support later moves to ensure that water users are in place early on in a scheme's life rather than rely on an uncertain rate of take-up.

Under the Regional arrangements that applied, Bill answered to the Regional Engineer John Moreton. Kev Devlin had met 'The Trump' before when Kev was a student on vacation practice at Maroon Dam. All the workers on the dam had John on a pedestal and Kev thought, "*My God, this man is God!*" But when the Regional Engineer arrived in Emerald, Kevin couldn't believe that *that this little 5'7" man with the beer belly was the fellow I had thought was 6'6" and God!*²⁷

To assist in the design, a Water Advisory Committee was formed. This has been very successful and continues to this day. There was also a Farm Inspection Committee to provide input on the design of the farms. But some of the clients were difficult. For Kev Devlin, *the shotgun incidents in Emerald would have to rate up there with some of the more difficult ones* of his career.²⁸

In 1980, the District Engineer's job at Mackay became vacant. Bill Souter asked his friend and mentor, John Moreton, if he should apply. *He said "You're building a wonderful scheme, why would you want to go and leave here?" So I never gave it a second thought.* He realised the error of his ways when Harry Stark told him he was supposed to have applied. *So I sat on the bank of the dam for a while and cried. The knee jerk reaction was to apply for Brisbane.*²⁹

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Cotton awaiting processing at the Emerald Gin

A problem arose in the Irrigation Area with some areas of saline groundwater appearing. After some investigation by the design team, a solution involving the installation of remedial measures including tile drains was devised. The Advisory Committee accepted the technical feasibility of the proposal, but the sticking point (as so often is the case) was the proposed cost-sharing arrangements. Peter Bevin described the cutting of the Gordian knot. *The farmers wouldn't sign up for the drainage deal because it was going to cost them a lot. (Minister) Martin (Tenni) booked the Government plane so we could go to a meeting up in Emerald. Martin walked in, a new Minister who had been on the job one or two weeks, and just said, "I've been told that you blokes don't want this Scheme. Let me be the first to tell you, thank you very much. What that means is that the money that we had set aside in the budget to put with your money, I can now put to more urgent work in my electorate of Mareeba." He had not told me what he was planning. He said, "I'm here just to make sure that you are happy with that arrangement. We are going out on a trip for an hour, then I'm coming back and if you are happy I'd like you to tell me. If you're unhappy, then I want you to tell me that you are going to match our funds. It's very simple. The plane is leaving at 2 o'clock, and I'll be back here at 1 o'clock. You have two choices." I don't know what happened, because we went out to the dam, came back, and the more rational people said, "We'll take the deal." We had been struggling with this problem for six months, trying to get them to sign up, but that was the end of that.*³⁰

Not only was the drainage scheme constructed, but it won an Institution of Engineers Award for excellence. The design of the entire scheme was completed in 1980.

The Eton Irrigation Area, which draws its water supply principally from Kinchant Dam, provides a supplementary irrigation supply to sugar farms between Mackay and Sarina. In about 1975, when the project was in its infancy, Peter Gilbey was

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Sugarcane at Eton

transferred there from Bundaberg. In Bundaberg the biggest landscape feature is The Hummock, a volcanic remnant in a featureless plain. Peter got to Eton and looked at the rainforest-coated mountains and thought it's a little bit different so we quickly had to relook at our hydrology and our formulas. The first thing I looked at was the rainfall records for a place just outside North Eton. A chap had come up from Victoria just to see events of 200 inches in a year, 20 inches in a night. Just trying to fit that into the very placid sort of design procedures we had at the time was somewhat of a challenge.³¹

Peter Gilbey recalls that just after the arc of the Main Channel had been completed, *this bloody great flood came in through this opening, which was actually a road, the Mia Mia Road up to part of Pioneer Valley. I couldn't quite work out why there was so much water coming through there until a farmer explained to me that there had been 16 inches of rain during the evening before. That was a pretty good test for the channel – nothing got washed away – but Don Beattie suggested maybe we should put an additional drainage overpass in just to help things along. To this day that channel has never seen a flood of its like. You can overreact to things, but I think Don made the right decision.*³²

For all the experience of other Irrigation Areas, there was still plenty to learn, according to Peter Gilbey. *If they looked back at some of those early specifications which would have been on half a dozen foolscap pages, today's corporate lawyers would laugh. But then there was still a sense of innocence, a trust between the Commission and the people with the earthmoving equipment. It was not this litigation mentality which we started to get into in the '80s and the '90s but it was more about how can we work together to get a job done.*³³

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Peter Hoey, a good squash player, was a member of the engineering team. When he moved on, a third Peter arrived to replace him – Peter Noonan.³⁴

Gary Luck joined Bob McDonald's design drafting team soon after, when the main channel was half completed. The first farm was supplied with water in late 1978. An off-take from the Eton Main Channel is the Brightley pipeline system. According to Gary, *Peter Gilbey came up with this 'you-beaut' plan to design the Brightley system which included three pump stations, two balancing storages and probably about 40 kilometres of pipeline. He had this seven-week plan, had it all timed out, and it took 107 weeks to finish!*³⁵

Ross Wheeler was transferred in as a water officer and was able to provide the design team with the benefit of his experience. In particular, he was able to offer advice on the provision and location of scour valves, but *when he went round operating he turned valves on, except he'd sometimes turn them off, because when they ordered them they had some left-hand closing valves and some right-hand closing valves, and you couldn't see the little arrow to show which way they closed.*³⁶

Ross enjoyed working with the designers. *It gave me an opportunity to share my operating experience and the designers were willing to listen and to modify designs to make life much easier for the operator. So it was very beneficial for both sides.*³⁷

Between 1978 and 1983, the scheme was only getting funding of only about \$2 million a year, which would normally finance about 8 kilometres of channel. But the \$2 million a year at that stage just wasn't keeping up with 17% or 18% inflation, so the scheme would never have been finished. However, Gary Luck thought *it was pretty handy from the design point of view, because we were keeping well ahead of construction and we had plenty of time to go back and alter things.*³⁸

As well as designing, Peter Gilbey wrote a couple of very good design manuals before a position came up for the District Engineer out at Longreach, in which he was interested. He hummed and harred for a few weeks, before he



Eton Irrigation Area with Kinchant Dam in the background

decided to apply.³⁹ When 'Gilbo' left, Peter Noonan became the main design engineer and Allan Murray arrived on the scene. Rob McAllister was District Engineer but he resigned and was replaced by Mike McKenna. He stayed for about five or six years through the main part of the design. When Peter Noonan moved on, Allan Murray took over and basically did the design of the main channel from 16 kilometres to the end, plus about half the pipeline reticulation during the six years he was there. At the end of that period, Graeme Allan left Kinchant Dam and Allan moved into construction, implementing his own designs.

Two new engineers arrived – the two apostles Mark (Lepper) and John (Tibaldi). According to Gary Luck, *they both had very interesting eating habits. Mark Lepper was very fit – into triathlons – but whenever he had a trip to Brisbane for work, he'd always bring back a dozen Big Macs and put them in the freezer. He'd thaw one out when he wanted to have a feed. John Tibaldi had previously lived with another junior engineer and draftsman, Dennis Howarth-Crewdson, a very proper man, keen on the culinary arts. The arrangement was that Dennis would make the meals and the others would clean up the mess. But he dirtied too many dishes for these other blokes, so after about three weeks they wouldn't eat his food, and they bought only takeaways. Dennis was very offended about that. He thought it was not the way civilised people should live.*⁴⁰

Mark Lepper was very good with computers. At the time the Burroughs computer first came in, Mark injured his finger and had to go to the Base Hospital every three or four days for physiotherapy. He'd take a Burroughs instruction manual with him, read it at the hospital, and then be able to come back and actually do it on the machine. Garry Luck was very impressed, claiming *I couldn't do it with the book beside me.*⁴¹

There was a Water Advisory Committee set up to help with the design and later the operation of the scheme. For the most part relations were very good, though sometimes there was robust debate. The community leaders could not have been more co-operative – Jim Pedersen, Paul Chembri and Ron Mullens from *Canegrowers*, Graham Davies, Doug Neville, John Mackay and Albert Volker from the mill, and Clive Rogers, Mayor of Mirani Shire.

There have been two customer service surveys done in the Eton Scheme, and they rated very highly in both. Ross Wheeler puts that down to *the fact that the staff of Mackay were good to get along with. The design team of the day treated the growers fairly. They, in turn, realised the value of water because when they hadn't had water, they could not grow good crops whereas now their sons are growing good crops reliably. They take a lot of pride in the irrigation scheme itself.*⁴²

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Some individual growers were less easy to deal with. One particularly cantankerous individual claimed that his neighbour always considered him to be fair and just – a fair ##### and just a ####.⁴³

According to Gary Luck, *the main problem we have is rural domestics. We have approximately 300 irrigation farmers, probably 40 rural domestics, and we get twice as many complaints from the rural domestics as we get from the irrigation farmers. It's always pointed out it's an irrigation scheme, not a rural water supply scheme, but these are people who come from the town, want to live in the country, but want town amenities.*⁴⁴ They object to channel closures for maintenance purposes and to the use of chemicals in the channels for weed control.

One of the big controversies within the Irrigation Area was supply from the North Eton main channel to the Victoria Plains area. It was always intended to supply the area, but it had been cheaper and easier to continue on building farther down the gravity system. Things came to a head with rumours going round that Victoria Plains had been left out, and would never be supplied. Naturally the locals were incensed and protested. *The main antagonist, 'Mr T', always stood up at meetings and said he was acting "on behalf of his fellow growers" – never in there for himself.*⁴⁵

Gary Luck recalls *Minister Martin Tenni attended a public meeting, but 'Mr T' heckled him so much, the Minister stormed out of the meeting. Six months later the plans were announced to supply Victoria Plains. The farmers all thought it was a result of the 'you-beaut' representations on their behalf, but it was on the schedule to be done all the time.*⁴⁶

There had always been options for serving Victoria Plains, involving re-lift pump stations and balancing storages. Malcolm Pegg decided that a Value Engineering study should be conducted. He confided in the facilitator, Ian Pullar, that he knew the best solution but it would be good for the team to go through the process so they would be convinced that it was the best option. In the event, Malcolm's solution came third.⁴⁷

Mark Lepper got the job of finalising the design. Regional Engineer Tim Smith happened to be in the design office one day, and had a look at this design, and *Tim said, "I think it would be better if you went around here." Mark was instructed to examine both alternatives. Not surprisingly, he recommended his original design to District Engineer Ed Donohue, who said, "But that's not what Tim Smith wants. Go and have another look at it." While Ed was on holidays, John Tibaldi acted as District Engineer, approved Mark's arrangement and sent it to Brisbane. By then Mark had been transferred to Brisbane and his Manager said, "We've got this thing from Mackay that we need somebody to look at, to see whether it's okay." Mark thought it was! Gary Luck hastens to add, "That's how I understand it happened."*

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The tale will be entered for the Dorothy Dix Prize along with Alan Wickham's dam safety committee anecdote in Chapter 13.⁴⁸

Progressively, the different sections of the irrigation area were built – the Eton Main Channel, the Brightley, Oakenden, Munbura, Marwood and Mt Alice systems, and, of course, the Victoria Plains system. *There was always pressure to put more and more on the system but eventually they called a halt and Eton Irrigation Area was completed in about 1991.*⁴⁹

Following the approval of Teemburra Dam, the attention of the irrigation area designers shifted to the problem of which areas were to be served. The dam would be able to supply about 24,000 megalitres per annum, whereas demand surveys had showed a requirement of up to 65,000 megalitres per annum. The negotiated



Ed Casey and Tom Fenwick at the opening of the Eton Irrigation Area

arrangement was that a Water Board would be formed to own and operate the reticulation works once they were constructed, but a determination had to be made of the best areas to serve.

Most of the conceptual work was done by Engineer Wendy Lucke, who has since left for greener pastures in England. There was a very short time frame to try to decide where the water should go. *There was a steering committee set up to assist in the elimination process. It was a very diverse group, ranging from local authorities to vested interests in Mackay sugar, and some very vested*

interests in the landholders, and trying to get them to work together as a group was a very interesting experience, according to Gary Luck.

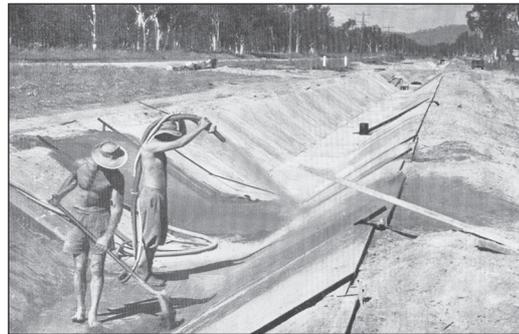
*At first it seemed like a real waste of time, trying to get the group to agree on what were the important factors and then put a weighting on them. We spent about six months trying to do that. One particular meeting happened to be on Melbourne Cup Day. We'd sat around a table for about five hours with this group, and we were further behind than when we started, so we went down and watched the Melbourne Cup and didn't bother coming back to work on it. We'd lost interest in the whole thing. But three months after that, everything just sort of fell into place and it turned out to be a very worthwhile exercise.*⁵⁰

The Burdekin River encompasses both the oldest and newest irrigation areas in Queensland. The original Inkerman scheme was commenced in 1916 and the BRIA was not completed during the twentieth century. Various stages of the original scheme are discussed in other chapters of this book.

OPENING UP THE CHANNELS

In 1974, Mike McKenna seized the opportunity to escape Brisbane and get *involved in the old Burdekin Scheme, which was being converted from tobacco to sugarcane. The sugarcane farms had to be bigger than the tobacco farms, and I was given the responsibility of increasing those farms to sustainable units for the new industry. The original 40 acre farms were to be increased to 70 acres.*

Mike McKenna had been to school in Clare in 1952 and 1956 (and, in other years, many other schools where his father was Headmaster). So *there were a number of people I knew very well. I enjoyed that bit of it. I think back to those days and the fact that we used to steer clear of the barattas country because it was no good for sugarcane, and we were more than selective in terms of identifying the areas that needed to be worked for additions to the tobacco farms. I was given a very free rein by Stan James, who was then the Regional Engineer in Townsville. I tick-tacked very closely in the design process with Bob Kimber, who was the Officer-in-Charge of Clare and could tell you any detail about any part of the system in the Clare or the river delta. I spent a couple of million dollars and saw the endeavours come to fruition. After a couple of years we had an operational system and the old tobacco farms had converted fully to sugarcane.*⁵¹



*Spraying concrete in the main channel at Clare.
Note the hard hats and safety boots.*

Following the approval of the Burdekin Falls Dam and the funding agreement with the Commonwealth Government, the planning of implementation of the new BRIA commenced. Ian Pullar recalls asking Peter Bevin what the arrangements were likely to be. Peter replied, “We haven’t decided whether we’ll design it ourselves or whether we’ll use consultants. If we do it ourselves we’ll need about 10 engineers. If we use consultants we’ll probably need a dozen!”

It was decided to set up a Design Office in Ayr. Jim Ole was appointed Regional Engineer. Kevin Devlin had *always had in mind that I wanted to be part of the Burdekin when it started, and Stan Ross certainly was aware of that. The opportunity came to move to the Burdekin in 1982 and start that off. I jumped at it, and basically I’ve been hiding up there ever since! The role has changed a lot from the days when it was basically a one-man band. The surveyor and I went there in ’82, started off with one draftsman, then put on an office girl, operating out of the DPI building for about a year and a half.*⁵²

It has been a very busy design office.⁵³ In the early days of the new scheme, Tom Fenwick, who was then Senior Engineer Special Projects, visited the area and Jim Ole took him for a drive of inspection. At an intersection a car ploughed into the driver’s

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side, severely injuring Jim. Tom suffered severe bruising from the seat belt but made a good recovery. For some time it was thought that Jim would die, but he survived despite horrific head injuries. He underwent many years of treatment including hospitalisation at Baillie Henderson Hospital in Toowoomba but remained severely handicapped for the remainder of his life. Jim had been a highly regarded officer and this event was nothing short of a tragedy for him and the Commission.

After Jim's accident, Tim Smith came down from Innisfail as Regional Engineer and operated out of Townsville for a time, until the office was built at Giddy Road. This has been occupied by the Irrigation Area designers as part of QWRC, DPI or DNR ever since. Kev Devlin was acting design manager until 1985 when Peter Gilbey moved into the position. By the time Tim Smith left at the end of 1991, Peter had moved to Mareeba and Kev assumed his position as design manager. He is arguably the best irrigation area designer the Commission ever produced – and the competition is strong. This is perhaps best illustrated by the Value Engineering experience.



Sugarcane fields in the Burdekin

As discussed in Chapter 3, Value Engineering was introduced to the Commission in 1987 and the Burdekin design was seen as a fruitful area for seeking improvement and economy. It would be understandable if the designers were to adopt a defensive attitude and to resent even implied criticism. But Kev Devlin (and, it must be said, Peter Gilbey) embraced the new process with enthusiasm and strove to improve their work.

And mightily successful it was too. A series of VE studies resulted in significant improvements to the design and savings in cost. And at no stage did Kev Devlin resort to a defensive bat. It is no doubt a measure of his competence that he had the confidence to say, in effect, "I know I've done a good job, but I'm equally certain that the team will be able to help me do even better."

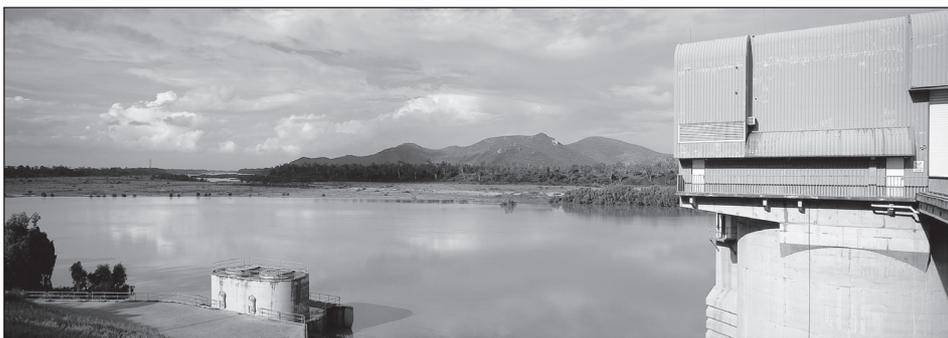
Another measure to improve the performance has been the establishment of working arrangements with the community. As Kev Devlin explains *I value the transition that we've had in the Burdekin from being the person who sold blocks to individual farmers, to being the person that they'd ring all day and all night – farmers don't ring you during work hours because they're busy solving problems; they ring you at night time. They invariably ring you when their mind's working, when they settle down about half past nine or they will ring you at half past five in*

OPENING UP THE CHANNELS

*the morning. We've gone from sales agent to 60 individual purchasers of 190 farms to problem solver, to customer service manager and water business manager. We've translated those relationships into just people who are friends, and that's been the good part of it. That means you're part of the community, you're known, you've got people you can stop and have a talk to, and if they see you driving down the street they'll stop and talk to you. That's the powerful part of it.*⁵⁴

A more formal activity was the use of advisory committees. Among these were the Burdekin River Irrigation Area Advisory Committee, representing basically user and industry groups, and the Burdekin River Irrigation Area Technical Advisory Committee (BRIATAC) with representation from government agencies, the University, consultants and others who could provide technical advice.

There has been an ongoing need for technical advice, particularly on the south bank. The Elliott Main Channel was commenced relatively early during the construction phase, but it was terminated and the major activity transferred to the northern side, pushing out into the barattas area, shunned by Mike McKenna as being unsuitable. Several farms were opened up on the south side including some experimental enterprises. It had, however, become apparent that there were some problems attached to extending the works farther south. Firstly, there was a series of dykes across the landscape that were likely to restrict drainage in irrigated areas. Secondly, the suitable soils were limited to non-contiguous areas that would require sections of channels that did not serve any farms (thus requiring investment without direct return). Not the least of these non-productive sections is the Stokes Range area where water would have to be passed over or under a saddle in the range at high construction cost and ongoing pumping cost. There are also potential problems in some areas from salinisation and environmental impacts on the foreshore and marine areas. There are, however, significant areas of quality soils as far south of Ayr



The Houghton Pump Station showing the miniaturised version devised by a Value Engineering study

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as Bowen where the water supplies are inadequate. Studies have shown that an extension of the Elliott Main Channel to Bowen would be feasible if there were sufficient customers buying water to grow high-value crops such as fruit and vegetables sold on overseas markets. The problem is that growers cannot enter into contracts to sell their produce without a guaranteed supply of water; and water developers cannot take the commercial risk of constructing the works unless they have captive water purchasers. The solution to this problem lies outside the scope of this history.

The BRIA, like the EIA, created farms with water supply rather than water for farms. To achieve this, the Government resumed land (paying compensation as prescribed under the *Acquisition of Lands Act*) and subdivided it. It is interesting to note that the Inkerman, Dalbeg, Millaroo and Clare areas were based on 40 acre farms. The new BRIA adopted 100 hectares (220 acres) as a standard economic unit and many new farmers purchased two or more farms at auction.

Not all the original owners were happy with the resumption arrangements even though they included retention farms as well as financial compensation. There were several legal cases with the angst that these inevitably incur. However, the *cause célèbre* was the Cox case. The Cox brothers claimed that they were entitled to higher compensation than that offered by the Commission because they had planned to install their own irrigation system. After several years of negotiation, the matter was taken to court – a great trial (pun intended) for those involved. Kev Devlin found the whole experience traumatic. *I was on the stand for six days and under cross-examination for a total of 19 hours. That's a prodigious amount of high intensity ill-feeling, if you like. It's hard to encapsulate it in words, but the animosity of that particular family for the organisation became intensely personal.*

The evidence that they actually had those plans was not accepted in the Court, but you had to pull apart their proposal and pull apart our proposal, and that could only be done by a person whom they could attack. Having their barrister George Fryberg – who is now a judge – question you for 19 hours is not something I'd wish on my worst enemy! I went grey in that year. It was also difficult because your personal life got involved in it. I had Ross River Fever in the middle of the case and that caused the Court to be adjourned. Even that was thrown up in the Court as an example of shirking responsibilities. My doctor was called before the Court and he gave them very short shrift. In fact, he brought me into his office while he was giving evidence before the Court in an in-camera session – he was sworn in over the phone – and he made sure I heard what he said. That's the level that the thing degenerated to. Very difficult. When the suggestion was put to Kev that it mustn't have been all beer and skittles, he shrugged and said philosophically, "No, but that's what you're paid for, isn't it?"⁵⁵