



Forest to farm

Lois Natta



As I drove deeper into the Mamaku forest, I was thinking: 'Crikey, is this for real? Surely I must be heading the wrong way. There can't possibly be a dairy farm in the middle of a forest'. But there was – and not just one farm either. It was a lengthy drive on forestry roads to reach my destination, so I wished I hadn't washed the car after all, but hey you live and learn.

Lachlan McKenzie has been farming for about 40 years. He has an Ag Science degree, and had worked for the now-defunct Ministry of Agriculture and Fisheries as a farm advisor in Taranaki prior to becoming a dairy farmer. So farming was clearly in his blood.

Omanawa Farms, which is a three-way partnership, has owned a large 1200ha forestry block for 12 years. Only 60ha of this block in the midst of the forest was developed and used for

young stock from the first dairy.

A further 170ha was developed last year as trees were harvested, along with all the infrastructure to form the dairy farm. A further 58ha being developed this year gives a total 288ha effective milking platform.

Lachlan's home farm is 26km away, through forestry tracks and coming out on State highway 36 then on to Kaharoa.

His home farm and the two Omanawa farms are all once-

a-day milking, which works well for them and the staff. The farm milks 650 mixed breed cows with the aim of reaching 750 next year.

The forest-to-farm conversion work commenced at Christmas 2017. "This was just a muddy hole full of tree stumps when we started," says Lachlan. A lot of earthworks were done to remove stumps and clear paddock space so it was suitable for grassing and further down the line, grazing. ►



The Frisram German-designed milk pumps from Waikato Milking System with the receiving cans.



This 50-sided herringbone shed is immaculate.



The pit walls are lined with an easy to clean poly panel.



One of the tip trailers from Titan trailers.



The yard is equipped with a loading race constructed by Lowe Construction.

The house that John Stevens built is a stunner in every way.

Omanawa Farms New Farm Dairy

Lachlan says the Omanawa farm staff did a great job of the grassing, fencing and water supplies. There is still a certain amount of debris that needs finishing off, but it's good enough to be grazed.

Geology

Mark Carlyle, who is owner-operator of Carlyle Drilling Ltd based in Te Puke, drilled and cased the bore to 198m. To break through to the water they had to pass through a variety of ground geology, which is fascinating in itself. Brown silts, purple rhyolites, fractured brown rhyolites, pink and brown rhyolites, brown rhyolites, ash rhyolites sands, purple fractured rhyolites, soft and firmer light brown rhyolites were all the different types of geology that was passed through to reach the water.

Who knew there was so much interesting stuff under our soil? Maybe I should have paid more attention in school?

Carlyle Drilling Ltd has a range of rigs suitable for any terrain and geology type – but for Omanawa Farms they used their GD1400 rig, which is suitable for medium to large farm and

irrigation water wells. The GD1400 has proven itself time and again to be up for any challenge it comes across. It is a large-capacity rig with a good performance record, particularly through solid rock. The bore that was installed pumps 29,000L per hour, and is used for both domestic and stock water on-farm. Rotorua Farm & Industrial Pumping Ltd supplied and installed the bore hole pump to 123.5m depth and associated pipework into the storage reservoirs. They also supplied and installed the stock water pumps and associated equipment, cowshed washdown pump and the washdown pipework in the yard and bail area and pipework into the dairy.

Clean milking characteristics

Lachlan decided to use Qubik Putaruru as his main point of call for his Waikato Milking Systems install. "I chose them because of their serviceability, reliability and workability," says Lachlan.

"They are great to deal with and if there is an issue that we are unable to fix ourselves, Qubik is here in 30 minutes."

Qubik Putaruru branch manager Andrew Linehan and staff member Chris Maughan say they installed a standard 50-bail Waikato Milking Systems herringbone, consisting of the standard Waikato Supa4 design with 320 claws, standard SmartPULS pulsators and a Fristram German-designed centrifugal milk pump.

The Supa4 is known for its clean milking characteristics and is fitted with a single 100mm milk-line draining into a receiver mounted at the entry end of the pit. The milk-line ensures cluster vacuum is maintained at an optimum level at all times and totally eliminates milk-line flooding. The 320 claws are robust but lightweight; also, the bowls have a five-year warranty and allow for faster milking and is one of the most popular and ergonomic claws on the market.

The SmartPULS system maintains a high rate of milk flow from the teat within each pulsation cycle and has been designed to reduce mastitis issues in the herd.



Qubik Putaruru staff member Chris Maughan and branch manager Andrew Linehan enjoying a joke.



Farm partnership co-owner Lachlan McKenzie and Numedic Ltd's Cathryn Reid in discussion.



Numedic Ltd's Cathryn Reid with the stationary irrigator on a sled.



The irrigation hydrants are located at various sites on the farm.

The milk room is fitted with a 7000L double bank stainless steel end plate cooler which won't rust, plus a standard maxi filter.

The plate cooler is fitted with galvanised floor mount brackets and clip-on plate gaskets, which allow for ease of replacement.

Touch of class

The shed was built by Lowe Construction from Matamata. It is a lovely streamlined shed with plenty of room in the pit, and the bails have an attractive smooth concrete edging down the length of the pit, which adds a touch of class. The poly panel-lined pit walls make for ease of cleaning – as do the walls on the side of the shed. The laneway down one side is undercover and leads to the milk room, supply room, toilet and office/staff room. The supply room has been fitted with a roller door to the tanker track, which allows for easier access when larger items need to be stored.

The walls of all the rooms are lined with poly panel, which Lachlan says are fully insulated "and keeps the rooms warm in winter and cool in summer".

Lowe Construction also fabricated the stone trap, which is located below and to the side of the shed in the paddock, leading to the Ecobag. The stone trap filters out all unnecessary solids, letting it settle in the stone trap, and in turn only the watery leftovers enter the Ecobag.

Fascinating

Lachlan invested in the Ecobag effluent storage system to contain all nitrogen and to enhance nitrogen re-use and capture. And because this area experiences high rainfalls an open pond system would just collect more rain. Additionally, methane is also contained – thus not posing a risk to further global warming. The Ecobag was supplied and installed by TechniPharm in Rotorua.

The Ecobag really has to be seen to fully understand its use. While I've seen adverts and read articles, I didn't fully understand until I saw it and heard what the farmer had to say about it. What a brilliant invention this is – it most definitely is functional in a way that open ponds lack.

The system is located next to the dairy, where there is very little, if any, smell – and no crusting to worry about either.

The Ecobag has underground pipes at the exit point going to the hydrants, which are then connected to sled irrigators for irrigating. The bladder fits snugly inside a 3m deep hole and can reach a height of 4m when full.

As rainwater is unable to enter the bladder, a drainage system runs around the outer edge of it and rain water dispenses into the drain and exits elsewhere.

Stationary but effective

Lachlan uses a Numedic tractor-mounted PTO 200E effluent pump to supply two Numedic stationary irrigators on sleds at the same time.

"The irrigators have application rates starting from 5mm per hour. This is very efficient with two going at the same time and a significant volume can be pumped on a daily basis," says Cathryn Reid from Numedic Ltd.



The exits are fitted with Ezi-flo pit gates.



The length of the bails has a neat concrete edging to them.



A Bloemen Engineering backing gate all the way from Taranaki.



The large rectangle yard equipped with a Bloemen Engineering backing gate.

It also allows an irrigator to be turned off and moved without turning the tractor and pump off. This system can pump close to one million litres in less than two weeks.

A turbo timer has been fitted to the tractor so it can be set to ‘turn off’ if staff plan to be away doing other jobs. The stationary irrigators on sleds are constructed with a sturdy galvanised frame with a high quality Sime cannon gun. An adjustable riser pipe ensures the canon is always vertical. The hoses connected to both sleds are connected to a tee tap on the hydrants, which are sited at various locations on the farm that allow effluent irrigation to a large area of the farm. Lachlan has been dealing with Numedic for more than 22 years and has a lot of faith in their products.

Lachlan has always been one for problem solving and searching for farm efficiencies. With this in mind, Kevin Smith, who owns KJ Smith Engineering, was rather chuffed that Lachlan chose to use his company’s Product And Prototype

Development Flex-connection farm hydrant system for his farm developments.

Inspiration for the ‘Flex connection farm hydrant’ came from a conversation with a farmer who had the misfortune of having had irrigation hydrants run into by fertiliser trucks.

Visabile hydrants

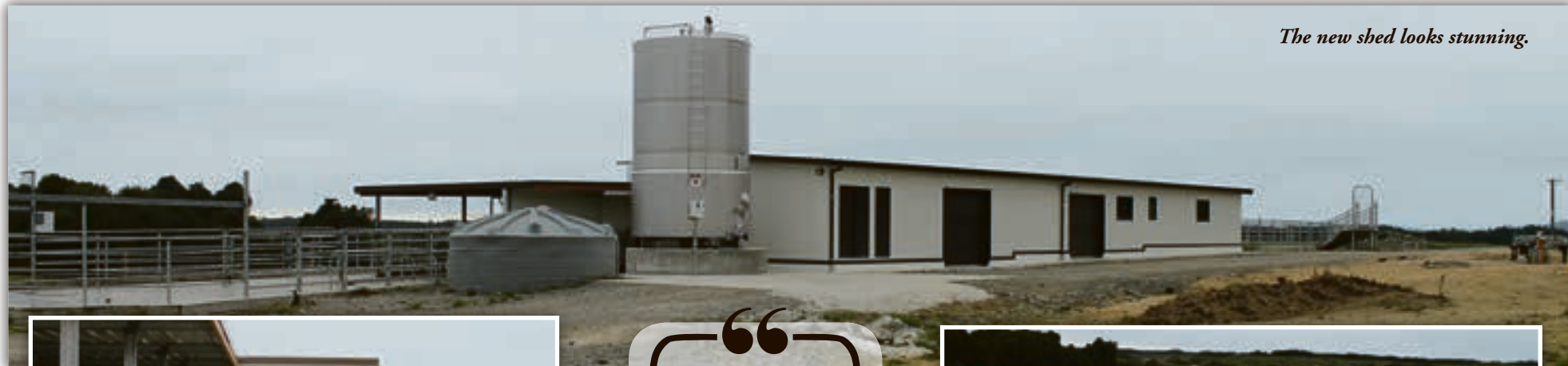
The hydrants had been difficult to see and hadn’t been forgiving when collided with as there was damage to the underground pipework – plus maybe a little damage to the trucks – as a result of each altercation. This was a situation that could have been avoided, or at least the damage minimised, if the hydrants had been more visible and had a degree of physical flexibility. Kevin made these two factors prime considerations for a farm hydrant system they’d been assessing. He added further attributes, such as long radius inlet and outlet bends for optimum fluid flow, a long radius

flexible connection hose for optimum fluid flow and resistance to vehicle attack, an optional yellow spherical marker (ball) that fits over the hose – about 1m from the ground – for hydrant visibility, ultra heavy hose clamps for the flex hose and underground PE pipe work. The very flexible design allows for multiples of outlet bends – or inlet bends if needed – that tailor to each farm situation, and good old camlock couplings for connecting the inlet to the outlet up-stands.

“With modular design, in-house bend and clamp manufacture, and the use of quality NZ-sourced hose and couplings, the price of the hydrant system remains on par with other farm effluent hydrants on the market,” says Kevin.

Energy saving

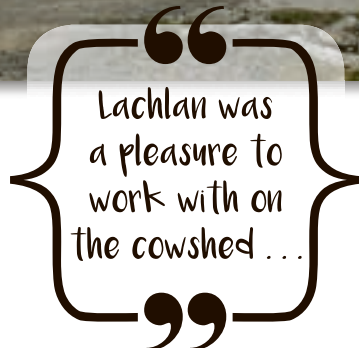
Laser Electrical Putaruru was commissioned to do the full electrical installation on the new herringbone shed including submersible pump and underground mains.



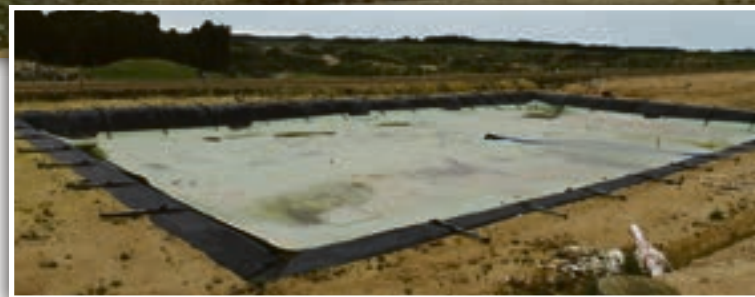
The new shed looks stunning.



The vet area is under roof cover.



Lachlan was
a pleasure to
work with on
the cowshed...



The Ecobag system is a fully sectional effluent storage system.

Central metering was installed so the two farm cottages are supplied from the one energy revenue meter, which saves on on-going daily charges over three connections.

The shed is a basic manual operation but has been futureproofed so an automated plant and vat wash can be added easily, says Laser Electrical Putaruru director Chris.

"Lachlan was a pleasure to work with on the cowshed as he knew exactly what he wanted but was open to suggestion with Laser Electrical futureproofing the new shed installation," says Chris McKillop.

The large rectangle yard was completed by Tirau Welders, which also took care of all steelwork, trusses, herringbone, AB race, and drafting areas. The large rectangle yard looks amazing and is completed with a Michael Bloemen Engineering innovative High Runner backing gate.

The High Runner is user-friendly and specially made for the NZ dairy market.

A patented feature of the design is it is uniquely self-aligning, which reduces wear and tear, enhancing the life of the system and reducing gate breakdowns. The gate is low maintenance and runs smoothly without jamming.

At the other end of the pit in the drafting area, there is a loading ramp sited to the side of the yard to keep things easy for transportation.

Trailers

Lachlan purchased two single-axle tip trailers from Titan Trailers Ltd in Rotorua. Lachlan says they get so much use from carting fence posts from farm to farm – "and as they have tipping capabilities, the women on the farm love them as they are easy to load and unload the ATVs".

The trailers are fully-welded and hot dip galvanised and fitted with galvanised tread flooring, which gives them a longer-lasting quality than the standard wooden flooring. The trailers were manufactured on-site at Titan Trailers' yard in Rotorua.

Happy home

Keeping staff happy and content is a biggie for Lachlan, hence the need for top-of-the-range housing for the people that manage and work the farm.

John Stevens Homes Ltd from Rotorua has constructed two beautiful three-bedroom homes with a light clinker brick exterior. The layout of the buildings is brilliant for dairy farmers – with each having a covered in porchway between the house and the double garage, which allows wet weather gear and dirty clothing to be removed and stored prior to entering the house. The

double garage has a separate and fully enclosed workshop built to the back of it, which keeps tools and equipment safe and locked away. Plenty of natural light flows through the houses, and they have a concreted entertainment area out the back of the houses. Staff are very happy with the accommodation and in turn treat it with the love and respect it deserves.

Lachlan and his staff alike are very happy with their new shed.

"Given that the herd has been brought in from various different locations and have been milked in numerous different types of sheds, they have all adapted well to milking in the new shed, and cow-flow is brilliant in the new herringbone," says Lachlan.

The farm staffs happiness with their new workplace shows in the cleanliness of the shed and surrounds. It was spotless! It really goes to show how much pride they take. ■



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