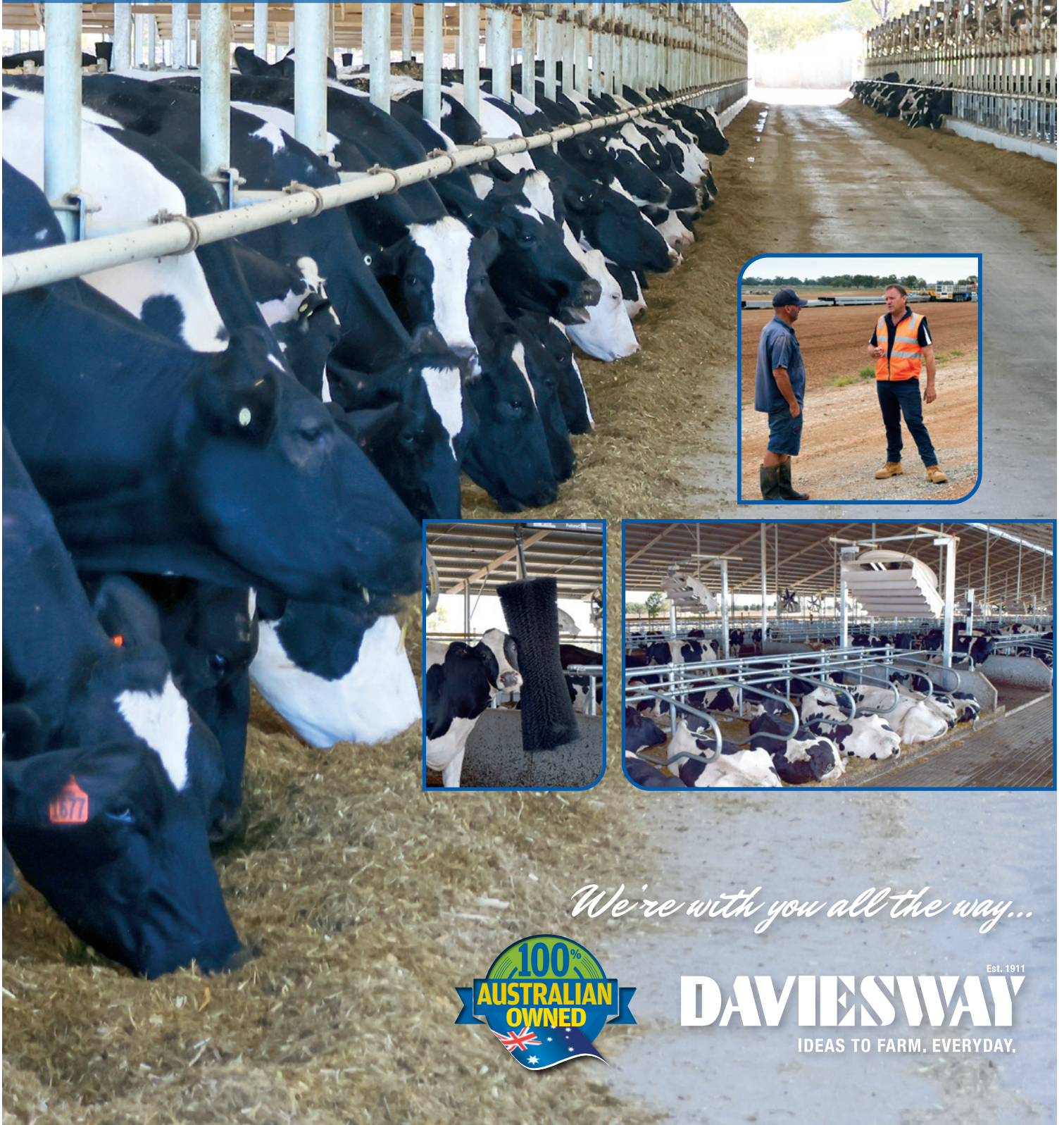


# Barn solutions for your farm

Project management supports you from concept to completion...



*We're with you all the way...*



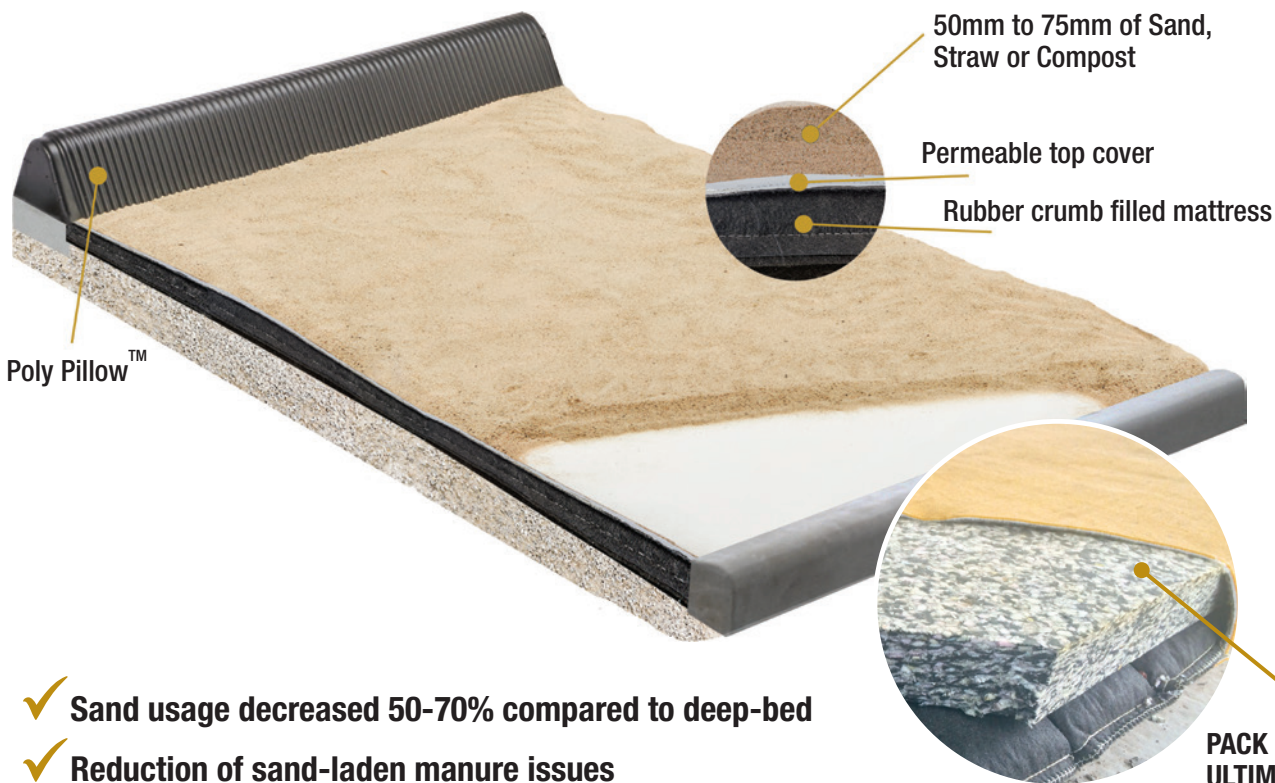
Est. 1911  
**DAVIESWAY**  
IDEAS TO FARM. EVERYDAY.



*The Leader in  
Animal Comfort*

# PACK MAT™

*Designed as a deep-bedding option for producers who want the comfort, productivity, and animal health benefits of a deep-bedded sand system without the work and operating costs that come with it.*



- ✓ Sand usage decreased 50-70% compared to deep-bed
- ✓ Reduction of sand-laden manure issues
- ✓ Better cow positioning and cleaner stalls
- ✓ No digging and better occupancy
- ✓ Legs and udders as clean as deep bed

*“Ray [Smith] and his family understood the application, so the Pack Mat Ultimate has been a massive success story for this system.”*

– Nico Polato, Daviesway

**PACK MAT™  
ULTIMATE** option has an additional foam layer on top of the rubber crumb filled mattress



# Welcome

Daviesway is thrilled to be part of the Raising the Roof conference – addressing the progress and profitability of intensive farming systems.

Our company has been involved at this end of the business for 15 years, and we have been honoured to have been a vital part of facilitating some recent projects – including the Smith Family farms (Mathoura, NSW), Westin Run (Walpole family, Yielima, VIC) and J. & M. Shannon Pastoral Company (Katunga, VIC).

It's not that many years ago that our clients had to travel overseas if they wanted to see a working example of a barn. Today, we are lucky to have a number of world-class systems successfully operating in Australia.

I'd like to commend those courageous pioneering families for the faith they've had in themselves, and in our industry. Their lead has paved the way for others – giving them the confidence to question, and to explore their own options.

It is having a positive impact across the entire industry, and it's exciting to see what is now being achieved when it comes to improving animal welfare, and production outcomes in environmentally sustainable systems.

## Taken for granted

There are many things we take for granted when our cows are outside on pasture.

In that environment, we don't need to understand how they lie down, and what sort of space they need to get up, and all the social activity and ventilation that comes with living in a confined space.

Together with our preferred internationally recognised colleagues in this space, we have worked hard to give Australian dairy farmers intelligent, and practical choices which work in Australian conditions.

We have also intentionally offered our customers the support of a skilled **Project Management team** in this complex arena.

## Project management team helps

I've seen a lot in four decades across all parts of the business. What doesn't change is that building a barn requires a careful approach to growth and planning.

There are a lot of spokes in the wheel, and we do like to unashamedly get inside our client's heads when we first sit down and consider what growth and intensive farming will look like for their operation, and for their family.

It allows us to make sure we deliver the expected outcomes in a well-grounded and structured approach.

It makes sense to tap into specialist support, because "one-size-fits-all" rarely applies in intensive farming.

If you have any questions, I urge you to talk to our team.

We're here to help, and we *will* be with you all the way...



### NICO POLATO

Project Management Daviesway/DASCO  
Mobile: 0428 517 363  
Email: nico.polato@daviesway.com.au

*Nico has worked with Daviesway for 21 years – with four decades of direct experience in mechanical, electrical, refrigeration, construction, plumbing, and waste-management. His project management skills give Daviesway customers valuable peace of mind.*

## WHO IS DAVIESWAY/DASCO?

*Daviesway is a family-owned Australian business, which is today home to a team of 70 staff located throughout the country. It has alliances with dealers, resellers and retail rural outlet stores across Australia. Its in-house manufacturing arm in Victoria includes a full service & technical team. Daviesway also includes a calf-rearing specialist department (including Australia's only dried colostrum for calves, kids and foals). Its in-house chemical manufacturing plant, DASCO, introduced pre-mixed teat sprays in Australia. Daviesway's strong networks with many of the industry's leading global industry players remains integral to it keeping in step with technology & innovation.*

*Barns are a complex addition to any farm, and Daviesway has a specialised team with critical industry knowledge and important networks to help its clients navigate decisions, and deliver the right result.*

*Visit [daviesway.com.au](http://daviesway.com.au) for more information, videos, stories and feedback.*



Daviesway's Nico Polato (left) has become a popular project manager for many savvy Australian dairy farmers, including Nathan Shannon of J. & M. Shannon Pastoral Company (right) at Katunga.



Ray Smith (left) based every decision around achieving exceptional cow comfort, and Daviesway's Nico Polato (right) was with him all the way.

# Housing cows is about cow comfort – isn't it?

*When Ray and Leanne Smith decided to house their cows in extreme cow comfort, every choice throughout their process added exclamation marks to that commitment.*

*Ray trusted his gut and his experience farming a compost barn for 20 years – and put it all together with his closest and most connected confidantes in this space – to design an intensive farming operation that is markedly different to every other operation in Australia.*

*Stage one is completed, and it stands as a shining example to the global industry. They have lifted the family's average production (per cow per day) from 2kg of milk solids (MS) to a peak of 3.1kg MS and dodged a potential \$2 million spend on the west end of the build.*

*This Rolls Royce result – which the Environmental Protection Authority (EPA) now wants to showcase to others – is a combination of hard work, smart cowmanship, the right reasons and a masterful collaboration...*

## Masterful collaboration

The real acid test of intensive farming is not putting up the shed, it's in the planning and the daily management afterwards, says the man who defied trends left, right and centre on this build.

Ray and Leanne Smith – together with their family – farm 4856 hectares (12,000 acres) near Mathoura, in New South Wales. The points of difference in this operation lie in every detail, in every decision, and in every deep, work-hardened line that criss-crosses Ray's hands.

The Smith family is in the middle of an ambitious project that involves building two barns (one is now operational), and a new 80-stand rotary (the second barn and rotary are both set for completion early in 2025). At that time, they will be milking 2500 cows. The second barn will be a carbon copy of the first – outside of being two bays longer.

But, it's not so much about the size of this operation as it is about the size of this family's decisions. They knew that including bigger dimensions and different details would cost more – but this is far from a reckless build: this is a premeditated decision to honour the words, "cow comfort" in the quest for more production.



Additional room at every turn makes access to the FutureCow brush easy.



Ray Smith chose to use fresh water for the flood-wash because it keeps the facility cleaner, and it isn't wasted.

The Smith family is currently milking 1300 cows (under the 274m long x 47.5m roofline) twice a day (through the existing 50-stand rotary that was built in 1990) on an even 12-hour split (2am and 2pm), averaging 40 litres for an average of 3.0kg MS a cow, and an average somatic cell count (SCC) of 120,000.

Most intensive farming operations in Australia look to the United States for their inspiration.

Instead, Ray and his family have collaborated with their trusted, well-travelled Australian consultants to interpret and mould those examples into something special for their operation.

The design intentionally allows more space per cow under the roof – including longer (and wider) cubicle stalls, alleyways and cross-overs. The cross-overs feature FutureCow brushes, which start rotating when the cows are within one metre of them, and generous transfer lanes on the outside of both sides of the barn, which means every pen of 300 cows spends no longer than 90 minutes involved in the milking process. It translates into the herd achieving 14 to 15 hours rest a day.

*“We decided early that we needed more area, and we needed the flood-wash lanes and alleyways wide enough so when we’re pushing the cows out, there wasn’t too much pressure on everything. It’s never nice pushing cows up skinny alleyways.*

*“And, while we aren’t breeding for big cows, they seem to be growing. Barn two will be a ‘copy-paste’ of barn one, which tells me that barn one is working pretty well.”*

The additional space has not only been about making it easier on the cows, it saves wear on the facility, and makes it easier for staff.

The extra length and width in the stalls has created a luxury landing for the cows – leading to more resting time and higher production.



The cows are achieving 14-15 hours rest a day in this facility.

### Luxury landing

The revolutionary bedding and effluent system negated the need for any pumps or power in the west end of the building – saving the family an estimated \$2m in the build. There is a 1% gradient fall throughout the facility, and a gravity-drainage system through to the storage systems.

*“I dug my heels in on that effluent system because I didn’t want any pumps and complex machinery at that west end of the shed,”* Ray says. *“It wasn’t just the capital spend, it was the cost of the ongoing repairs and maintenance that I know comes with that.”*

The bedding, which is topped up twice a week, is underscored by Promat Pack Mat Ultimate beds that hold a topping of 100-120mm of chopped straw mixed with ag lime. It has created a luxury landing for their cows.

*“Because we do a lot of cropping, we have an abundance of straw, and we thought it would be good if we could use it.”*

The effluent and bedding are 100% recoverable – and it has already almost halved the family’s annual fertiliser bill with just the first barn in operation. Last season they fertilised a wheat crop using the effluent, and solids from the barn to test the theory. They harvested an identical tonnage to conventional fertiliser of five dry tonnes per hectare.

*“We could have gone with sand for the cow’s bedding, but at the end of the day what do we do with it? I buy the lime for the bedding, but I no longer have to buy it for our cropping operation. So, we’re not losing anything, and we get to use it twice.*

*“Halving our fertiliser bill is a big deal, and it’s something we didn’t think about that much at the start. I couldn’t be happier with how that part of the build is working.*

*“Some of the cows coming back from the dairy go straight to lay down. In fact, last time we had some people visit, half the cows didn’t even get out of their beds when the feed mixer went past. They were that content. While they are laying down chewing their cud, they are making milk.”*



Darren Smith represents one of the next generation to take on this operation.



Using Promat’s Pack Mat Ultimate as a foundation – topped with chopped straw and ag lime – has been great for the cows and for the environment.



Feed is turned and freshened twice-a-day, in between fresh feed being delivered five times a day.



Ray Smith was against using recycled water in the flood-wash, and he says it's been a good decision.

## Catering to the cows

Fresh feed is brought in five times a day, and is pushed up manually twice a day using a special machine that includes an auger, so the feed is also turned and freshened in those passes. This time is also a chance to lay eyes on the cows again.

The water troughs are all tipped and scrubbed every time the cows go to the dairy (along with the crossover space). Any manure on the bedding is "picked and flicked" into the alley in preparation for the flood-wash when the drovers come through.

The 140,000-litre flood-wash uses fresh water because Ray likes a clean ship – and the water isn't lost, it goes through to the effluent system to be re-used on-farm.

*"That was all calculated and it's worked exactly as we planned. You push a button, and you could eat your breakfast off the alley."*

*"I was completely against using recycled water back down through the barn. I just couldn't get my head around it because it's not like we're wasting the water. It gets reused on the paddocks anyway. I think that's why the barn always looks so clean."*

Sensors bring consistent and repeatable comfort from fans, misters, foggers and lighting. The fans and feedline spray come on automatically at 20 degrees (by zone), and they ramp up as needed through the day. They are achieving 3m/second airflow over the cows (using an anemometer to monitor wind speeds and air exchange throughout the barn). The lights are timed to give the cows 18 hours of light.

## Quiet advantages

Several other advantages surprised Ray.

*"I can't get over the amount of time in general farm jobs we're saving now. Simply from a time perspective, we don't have to set up paddocks or electric fences anymore."*

*"I'd also say we're harvesting an extra 35% of dry matter off that old milking area the cows used to graze, because we get a clean cut, the cows aren't wasting feed, or pugging the paddock."*

*"In the middle of winter, we can drive across the place in our car if we want to. In the past you couldn't go down there on a horse."*

*"It's also incredible to think about the savings we will now have on fertiliser costs – not to mention the positive environmental results – once we get into full swing with two barns."*

## How they did it?

A critical part of this build was the team Ray hand-picked for his corner, which includes Philip Schulz and Nico Polato.

Philip has more than 50 years' experience in agriculture, including 12 years as Daviesway's Dairy Equipment Sales and Planning Manager. In that time, and before he semi-retired, he was exposed to the best operations and technology in the USA, Canada, Israel, the UK and Europe. Ray has known Philip his entire life, and the completion of this project will signal his formal retirement.

Nico – who stepped into Philip's shoes some time ago – has worked with the Australian-owned Daviesway for 21 years, and his project-management skills have become an integral part of many of Australia's most successful dairy builds.

The final part of Ray's project management team was his closest friend, Gavin Kennaugh, of G & K Kennaugh

Earthmoving & Civil. Gavin runs an extremely successful business, and he added plenty of wisdom and perspective

Ray says, *"Nico and Phil have a wealth of knowledge. When you start these programmes, if you think you're going to build it yourself you're dreaming. Most of us are farmers, not builders."*

*"Nico and Phil have been all over the world and seen most things, so you don't really need to go yourself. We have plenty of knowledge in Australia when you have blokes like that around."*

*"But you need two or three good project managers, because three or four heads are better than one, and you can't run the farm and build something like that at the same time."*

## Formula-one performance

Nico says Ray is a rare commodity.

*"He runs his farm like a formula-one raceway,"* Nico says. *"He's getting the one percenters all the time from the amount of times he puts out feed every day, to the number of times he pushes that feed up, to how he manages his flood wash, to how he manages the bedding and his milking routines on a 12/12 shift."*

*"Essentially, this is still a six-row barn, but if you have a look at it, it has two head-to-head rows on the outside – with a flush alley and transit lane outside of them – and there are two single rows on each side of the feed alley. The way this has been set up with travel lanes is quite distinctly different to anything else that has possibly ever been built anywhere in the world."*

*"We know Ray is doing such a good job and he's a quiet achiever. The welfare of the cows is his passion and that's why he's spent the additional money on the total square metres per animal."*

Ray says the feeling was mutual.

*"That's why I've retained the same team for barn two."*



When Ray Smith (left) looked to choose his project management team, it included Daviesway's Nico Polato (right).

## Bedding rationale

Nico says well-managed, cow-mattress bedding systems significantly improve cow comfort – and the Smith family has proved that.

*“When you say you have a cow mattress, the first thing that often comes to mind is an image of a bedraggled cow lying down on a cheap rubber mat,” Nico says. “That is far from what this system is. Promat’s Pack Mat Ultimate system incorporates a crumbed rubber 70mm sausage mattress that is very soft. It has a 45mm foam layer on top of that with an impervious cover over the top of that, then comes the loose bedding material on top of that.”*

*“Few really understand the application. Ray and his family did, and they worked hard to get the bedding right, so they have been a massive success story for this system.”*

The ventilation systems and technology include the Canadian intel behind the brand names that pioneered ventilation and barn equipment: Top Cool and East Rock. That technology also lays claim to one of the most experienced and well-travelled support teams marketed through inBarn.

inBarn is distributed in Australia by Daviesway, and the service includes the installation and full technical support.

## Why they did it

Ray and Leanne were moved to make the changes because they have four children and 11 grandchildren in the mix.

*“I wouldn’t have done all this without family. Leanne and I have pushed pretty hard up until this point, but I don’t think I would have kept pushing on my own. The kids are doing a great job, and the reality is that growth brings incentive.”*

## One for all, and all for one

Leaning on the rail – always watching the cows – Ray summarises that building a future for their family by looking after their herd is a good feeling.

*“To be honest, I don’t have to say too much now. The cows say it for us.”*



Ray (standing with a cap) and Leanne (sitting on the bale wearing a black tee-shirt) Smith are surrounded by the next two generations. Family is one of the big reasons they developed their operation to this point. Photo supplied.



A second barn is now under construction with a new 80-stand rotary following closely in behind, using the same project management team.

# ZorbiFresh

## Natural powdered animal bedding conditioner

ZorbiFresh™ is a bedding conditioner that absorbs up to 199% of its weight in moisture.

For housed adult animals in barns or young stock in pens, ZorbiFresh™ leaves your bedding drier and reduces odour.

If the bedding (and effluent) is recoverable as a fertiliser, its natural Zeolite can also improve soil chemical properties, support plant growth, increase yields, water use efficiency, and nutrient leeching.

It also makes your working environment healthier for your animals, you, and your employees.

### About ZorbiFresh™

- A bedding conditioner for cows, calves, equine, & swine
- Suitable for shavings, sawdust, concrete, or rubber beddings
- Contains natural Zeolite



Est. 1960  
**DASCO**  
 HYGIENE • HEALTH • NUTRITION



# inBarn

*inBarn is a collective of dairy experts dedicated to finding the solutions that improve productivity and profitability.*



**inBarn's products are built tough and built smart to create a stress-free and comfortable barn environment.**

## Quality products include

- ✓ Free Stalls
- ✓ Headlocks
- ✓ Gates
- ✓ Ventilation
- ✓ Cow Cooling
- ✓ Lighting
- ✓ Water Troughs
- ✓ Fencing equipment



*"There is a lot of science involved in putting a roof over cows. I wouldn't recommend anyone just grabbing some fans and randomly putting equipment into a barn without understanding what the cows require, and what the equipment does. If you don't fully understand, you most likely won't get the return you're looking for. That's what we're here for – to support our customers throughout."*

– Sue Hagenson, inBarn Senior Dairy Consultant

FOR MORE INFORMATION

1800 666 269 • [daviesway.com.au](http://daviesway.com.au)



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