Smart storage setups

One of the best ways to plan a facility is to utilise examples or aspects of other grain storage facilities that function efficiently and smoothly. This can be particularly useful if planning to scale-up a facility over a number of stages.

Although COVID-19 put a significant dent in our travel plans required to bring you examples of grain storage facilities from across the country, with the cooperation of industry partners, we were able to pull together 11 impressive grain storage facilities to inspire those looking to invest in on-farm grain storage.

Case study

Name: Ruwoldt family
Location: Rupanyup, Vic
Total storage capacity: ≈12,773t

The latest addition to the Ruwoldt grain storage facility is six 1000t flat-bottom Superior silos. These have been added to the shed and silo storage already employed on Glenvale Downs.

Aeration and hygiene are key ingredients in the mix with high capacity fans fitted to the large flat bottom silos which have full floor aeration. One of the silos has aeration capacity sufficient for ambient air drying of grain.

The flat-bottom Superior silos were installed in 2017–18 and are the most recent addition to what is a series of planned grain storage infrastructure expansions.

Case study

Name: Matthews family
Location: Rupanyup, Vic
Total storage capacity: ≈9000t

Brett Matthews has recently installed four new 1500t flat-bottom AGI silos, expanding the grain storage complex which already included 18 Ahrens silos (126t each) amongst other elevated cone-base silos.

To assist blending opportunities and reduce the need for auger shifting, outload augers on the flat-bottom AGIs are positioned to converge to a central point. Grain bags have been used in the past where additional short term storage is required.

The facility includes a weighbridge and sample hut.

Case study

Name: Candeloro family
Location: Toodyay, WA
Total storage capacity: ≈64,000t

There are only a handful of large on-farm grain storage facilities in Western Australia with the Candeloro family owning one of the largest.

Having recently added two new 12,000t Kotzur silos to the already sizeable facility, the existing inloading tower was able to be utilised.

In addition to being gas-tight sealable, aeration cooling systems are fitted to all storages in the facility. The new 12,000t silos each have a dozen high-efficiency brushless electronically commutated (EC) motor-driven fans to drive cooling air through the grain stack.

Case study

Name: Mott family
Location: Speed, Vic
Total storage capacity: ≈24,000t

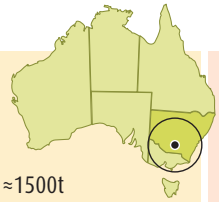
Murray Mott has recently added to his existing grain storage facility including a garner bin, two large flat-bottom Kotzur silos and a pit. This adds further capacity to the complex which already had numerous flat-bottom silos and 26 elevated cone-base silos.

Sheds and bunkers are also used, each of which can be outloaded into trucks on a common circuit via the weighbridge.

Two lines of the circa 100t elevated cone-base silos have outload belts running their length for blending and are terminate over a concrete pad to sit belt conveyor hoppers onto.

Power for grain shifting and aeration comes from a 220kVa genset on site.

Case study



Name: Kotzur family

Location:
Pleasant Hills, NSW

Total storage capacity: ≈1500t

A drive-over 30t grain pit, aeration and recirculated and outload blending ability is incorporated into this facility west of Henty, NSW. The three larger elevated cone-base silos are circa 300t capacity with another three 160t batch weighing silos. This allows each to be filled with twice that of a truck load of wheat for batched outloading. Inloading grain can be done at around 400 tonnes per hour with belt weighing to calculate tonnage received. Photos: Kotzur family

Case study

Name: Manchee family
Location: Moree, NSW
Total storage capacity: ≈3600t

The Manchee operation at Bogamildi near Moree, NSW, is one of the most impressive we have seen. There are two recently constructed flat-bottom 1500t and eight elevated 200t cone-base silos all from Dennys silos. The site is well-laid out with a circular drive around the silos to a permanent outload point which is fed via a series of belted conveyors running under the elevated cone-base silos. The belts extend back to the flat-bottom silos which can and in time, will be extended back to another pair of large flat-bottom silos.

Inload is via a 33.5m, hydraulically driven 13-inch Brandt auger with a swing-away hopper.

A weighbridge is positioned on the main road in and out of the facility ensuring mass management compliance.

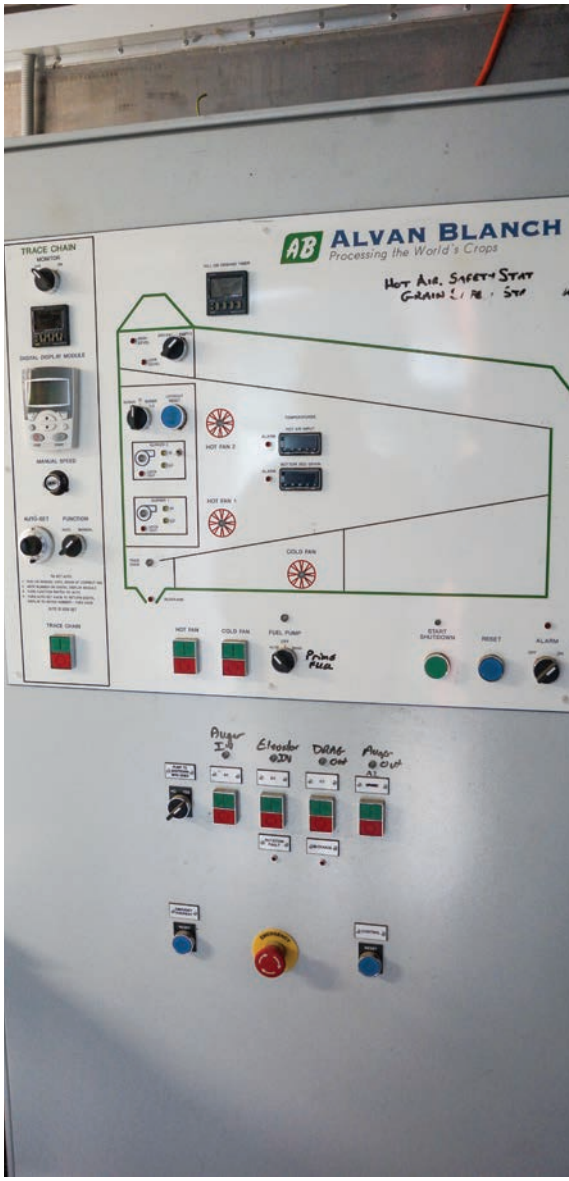
Case study

Name: Fowler family
Location: Howick, WA
Total storage capacity: ≈1000t dry grain silos plus wet grain sheds

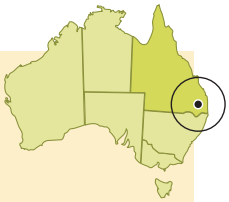
This Alvan Blanch DF26500 continuous flow dryer is capable of drying 15–20 per cent moisture content cereals down to 12.5 per cent at a rate of around 30t/h.

Flow rates at Andrew and Marie Fowler's "Chatham" farm at Howick, Western Australia, are achieving 40t/h with wheat where just a couple of moisture percentage points need to be removed.

The dryer is part of a facility which includes three 330t Kotzur gas-tight-sealable elevated cone-base silos filled with a single elevator coming off the dryer.



Case study



Name: Anderson family
Location: Oakey, Qld
Total storage capacity: ≈6000t

Seed segregation and storage are the primary functions of this setup owned by the Anderson family west of Toowoomba, Qld. It is an impressive line-up of silos which have previously featured in *Farming Ahead*.

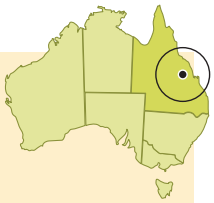
It has expanded in phases since we last saw it with additional Grainmaster silos adding to the multiple Ahrens 126t silos on site.

The Arcadia Grains setup demonstrates forward thinking and expansion in its design.

Currently in a construction phase, the site includes plans to move the power lines in conjunction with the utility supplier.

There are also plans for an expanded hardstand which ensures the setup is easy to maintain and functionally matched to its purpose. The Anderson family utilises two mobile Agridry dryers to optimise seed moisture content prior to storage.

Case study



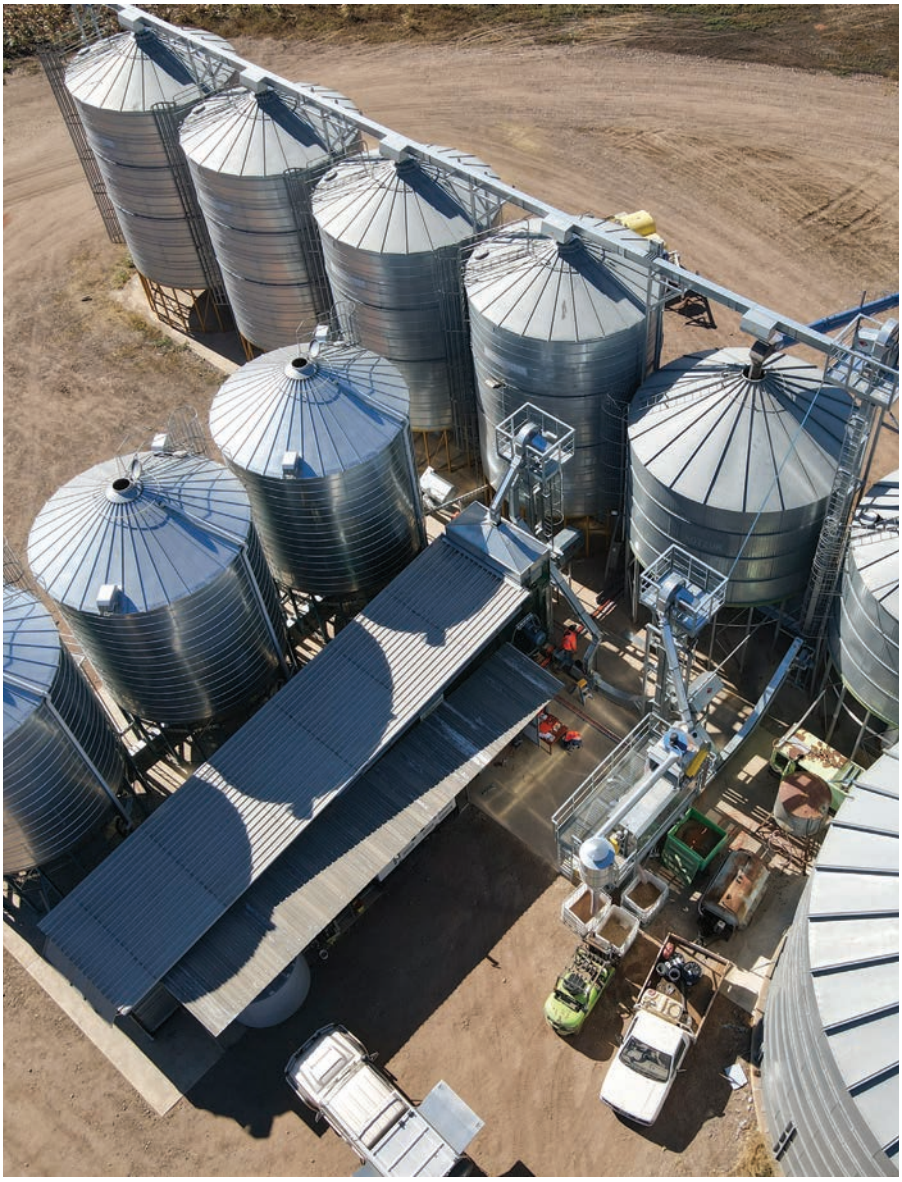
Name: Withheld
Location: Dysart, Qld
Total storage capacity: ≈3000t

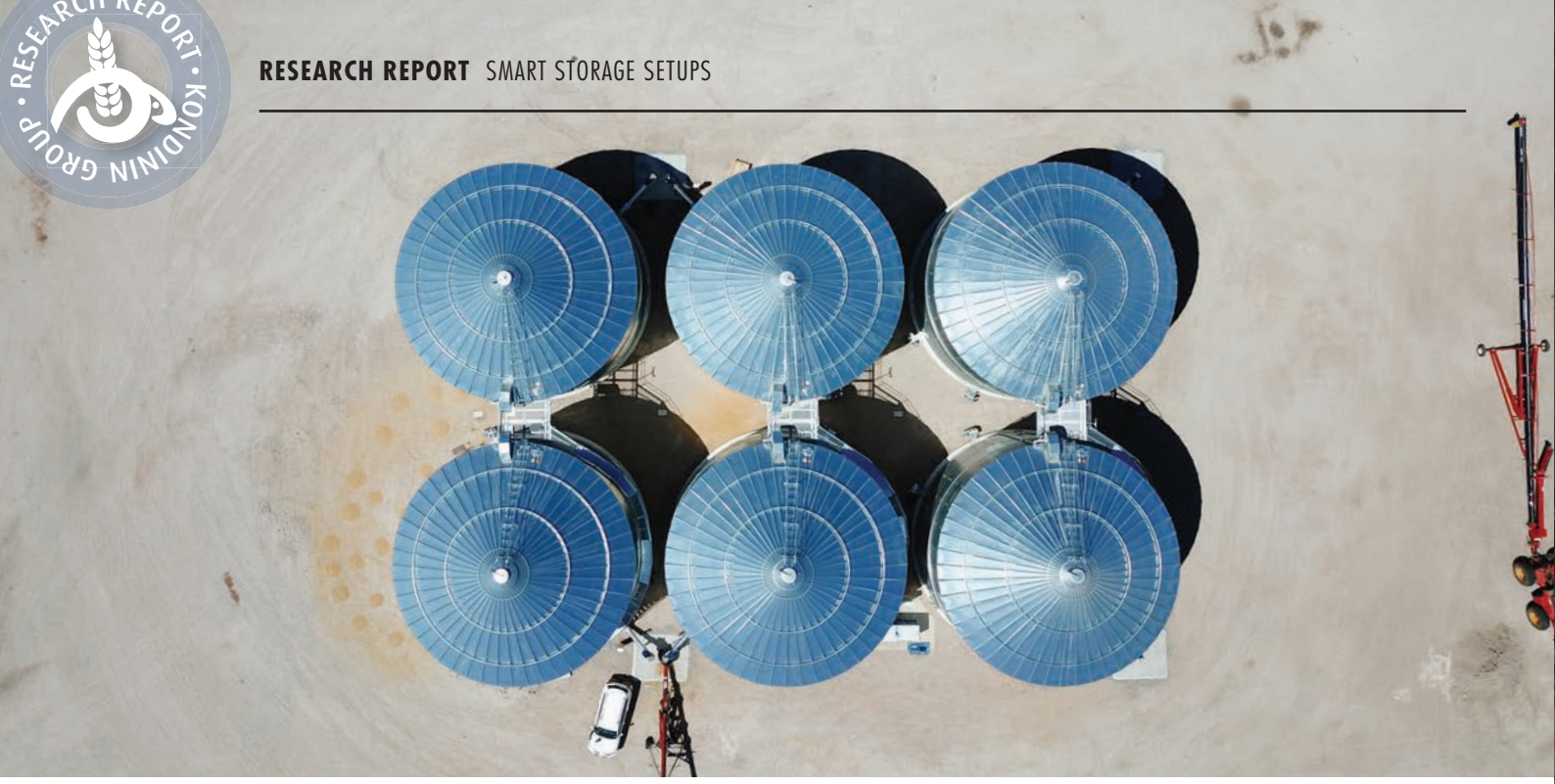
This existing facility incorporating numerous Dennys silos, recently integrated an Alvan Blanch grain dryer, and reclaim and rotary cleaning capacity.

Additional grain handling equipment was also added to move, reclaim and load out grain once cleaned and/or dried.

A Skandia Elevator AB feeding line shifts wet grain at 60t/h into the DF2200 Alvan Blanch dryer. Capacity varies by grain type with a one per cent reduction in moisture for sorghum flowing at around 40t/h.

Outload to trucks is around 100t/h via the elevator. Photos: Jim Duncan, Alvan Blanch





Case study

Name: Swann family
Location: Berrigan, NSW
Total storage capacity: ≈9390t

Geoff and Cam Swann farm at Berrigan NSW and have recently installed their first major grain storage facility with six 1565t Cyclone silos installed by Optimum Engineering Solutions.

The Swann family will store wheat, barley and canola on-farm and have laid the facility out to allow trucks to circle the silos and outload from one of four outload points. Two pairs of silos share a common outload point with three spiral staircases each servicing a pair of silos.

Power for aeration and outload sweep augers comes from an on-site 75kVA generator. Photos: Joel Murphy, Optimal Engineering Solutions

Case study

Name: Withheld
Location: Murtoa, Vic
Total storage capacity: ≈15,000t

This storage facility near Murtoa in Victoria is a good example of a staged construction site with the latest installation being six new 1500t flat-bottom silos.

The balance of capacity is largely made up of 120t and 126t silos. Other storages have been shifted to this central point from other farms to consolidate and centralise facilities.

Plans are afoot for expansion into the future with allowances made for the addition of an elevator for inloading.