

New dairy unit design suits students and cows

Top of the class

State-of-the-art milking and learning facilities are benefiting students and cows alike at a new unit in Cumbria. College applications have increased and milk yields and cow health and welfare have also improved. We spoke to the farm manager to find out more.

text **Ray Meadon**

A pledge to put agriculture back at the heart of one Cumbria-based college has seen the development of a new dairy unit, which is providing students with some of the best milking and learning facilities in

the UK. These include a 30:30 Fullwood herringbone parlour, modern cubicle housing and dedicated AI and veterinary handling races. Officially opened in March 2014, the £2.4m unit at Newton Rigg College has seen a marked increase



Jonathan Fisher: "Unit works well for cows and students"

in milk yields and improvements in cow welfare, most notably a reduction in lameness.

New beginning

Sewborwens Farm has been part of Newton Rigg College since the 1950s, traditionally being used to house the college's youngstock. When the Newton Rigg herd was culled during the 2001 foot-and-mouth disease outbreak, the farm was earmarked as the site where a new college herd would be eventually be housed.

However, it wasn't until 2013 that the farm was re-stocked – after being taken over by Askham Bryan College in 2011. The Yorkshire-based college bought 60 cows and 60 heifers from local herds to start the ball rolling.

At that time, the twice-daily milking regime was carried out in a temporary bail, with the unit's dairy facilities housed in a shipping container. "The college had promised that year's intake of students that they'd have access to full milking facilities, so we needed to provide a temporary set-up while the new dairy unit was being built," explains Newton Rigg's farm manager Jonathan Fisher.

Controlling lameness: cows walk through a footbath at the collecting yard entrance

Rapid exit: the parlour's indexing rail lifts away





New facilities: cow handling system and straw yard accommodation, with plenty of rubber matting



Cow comfort: the herd's housing comprises GEA M2M Kingshay cubicles, which are adjustable

The temporary parlour comprised 15 milking units, equipped with ACRs and in-parlour feeders, which milked the 100-cow herd in just two hours. This facility was in use until February 2014 at which point the herd was moved into two newly erected 72m by 36m buildings: one providing cubicle housing for 160 cows and the second providing an additional 40 cubicles plus five straw yards for calving cows, a collecting yard equipped with backing gate and footbath, a full set of AI and veterinary handling facilities, a new dairy, and offices.

Blank canvas

The new facilities sit adjacent to the traditional barns at Sewborwens and were designed with input from the wider farming community. "We started designing the new unit with a completely blank canvas and were open to any parlour design and farming type," says Jonathan.

"At first we didn't know if we'd end up with a high-input or a low-input system or whether the cows would be milked conventionally or robotically. We hadn't even decided what breed of cows we were going to restock with. The only stipulation was that the new unit needed to be commercially viable and fit for the purpose of teaching students all year round."

Fifteen local producers were invited to share their ideas about how the unit should be run and what it should look like, with the consensus being that the college should be milking at least 200 Holstein cows all year round through a herringbone parlour on a high-input-high-output system.

Today the Newton Rigg herd numbers

220 pedigree Holsteins housed all year round in buildings fitted with GEA M2M Kingshay cubicles. "Our end goal is to reach 240 cows using our own heifer replacements," Jonathan adds. "We took a strong line on cow welfare and chose the cubicles that offer adjustability and excellent cow comfort.

"We also specified extra wide central feed passages to enable staff and students to observe cows more easily, and fitted overhead roof light ridges to maximise the availability of natural light." The roof is also fitted with solar panels, which assist in the cooling of milk and heating of washing water, and in doing so, reduce the unit's overall running costs.

The herd is milked through a Fullwood QS 30:30 herringbone parlour featuring 90° indexed stalls, which lift away from the cows at the end of milking for rapid exit. A DEFRA health and welfare grant assisted with the funding.

"The Fullwood parlour was the most competitive in terms of overall costs, but it also offered the QS parlour as a unique solution to our specific requirements of wanting a rapid exit parlour, but with in-parlour feeders. It's a hybrid of the two systems," says Jonathan.

The parlour allows rapid milking by presenting the cows at 90° for faster cluster attachment. "Rear leg milking is also better for training students who need to learn the correct routine for teat and udder preparation," Jonathan adds. "The angle also allowed us to fit more milking points into a smaller space."

The parlour differs from most installations in that the pit is almost four metres wide, allowing students to work and learn alongside the farm's

staff. "Our aim at the outset was to provide our students with the best facilities. Each student spends at least one full week on the unit. The new dairy facilities are the icing on the cake and the number of student intake applications has significantly increased since the it's been in operation."

In addition to its role as a teaching facility, the parlour was also designed so that it can be used efficiently when the students aren't there. "With our two herdsman, we can comfortably milk 200 cows in 100 minutes," Jonathan says. "Most of the time the parlour is manned by one herdsman and a number of students, with milking still taking fewer than two hours, but the parlour can also be easily operated by one person."

Improved performance

As well as an increase in student numbers, the new unit has also improved herd productivity. Milk yields have risen from 27 litres to 34 litres per day due to a combination of factors, according to Jonathan. "The new parlour and housing facilities allow us to manage the entire herd more efficiently. We are now able to dispense three separate feeding curves for heifers, freshly calved cows and lactating cows.

"We are also able to keep on top of lameness more effectively. Wider turning circles and rubber matting on 50% of the entire unit's floor area – as well as daily footbathing – have all helped to achieve mobility scores of zero or one in 98% of our cows. To us, that's proof that we've not only built a first-class teaching environment, but that we've also designed a dairy unit that works well for our cows." |