

# Dairy Cow Handling Facilities

The Cafre dairy unit has been designed to best meet the education and training needs of agriculture students and the dairy industry, to enable the delivery of knowledge and technology transfer and to comply with all relevant legislation and animal welfare recommendations.

This is one of a series of technical notes aimed at farmers and students. The notes are designed to provide the level of technical detail required to assist farmers in adopting technologies and practices demonstrated in the new Greenmount Campus dairy unit on their farm business.

## Dairy Cow Handling Facilities

When working with livestock, operator safety is the main priority. More than a quarter of fatal accidents on Northern Ireland's farms involve animals. 19 farmers have lost their lives as a result of incidents involving animals in the 10 year period to 2013.

Next to operator safety, the handling facility in Cafre dairy unit has been designed to allow easy movement of animals throughout the entire area with the minimum of stress and effort to the stock - floor surfaces provide good grip, there is natural and artificial lighting throughout. The facilities consist of a number of separate areas with their own purpose. Where possible automated treatment, group treatment and data capture have been included. The facilities are:

1. Automatic drafting gate
2. Segregation pen
3. Handling race and crush
4. Herringbone crush
5. Loading bay
6. Skills training Area

## Automatic Drafting Gate

The 3-way automatic drafting gate is positioned just before the central cross-over passage of the cubicle house. The cow is automatically drafted according to her pre determined setting in the parlour computer. The CAFRE selection criteria for the drafting gates specified 99%+ accuracy of the shedding process. The drafting gate can divert the cows in three directions as we look at the picture:-



1. To the right - through the central return passage to the cubicle house.
2. Straight ahead - to the main return passage. (Crush race on herd test days)
3. To the left - into the segregation pen for treatment

## **Segregation Pen**

From the automatic drafting gate, drafted cows initially walk in the same direction as their herd mates before being collected in a large pen for routine health treatments, veterinary inspection or for student training purposes. Drafted cows have access to water while they wait to be treated. The segregation pen can be subdivided. From these pens the cows can be moved to the student skills training area, the herringbone crush or the handling race.

The floor surface is finished with hexagonal grooves tamped into the curing concrete. After use the area is volume washed. An open drainage channel aids cleaning.

## **Handling Race and Crush**

Statutory animal disease testing of the Future Herd takes place in the handling race. During use, cows enter the handling race directly from the auto shedding gates and wait for testing at the crush. The crush is equipped with a locking head yoke and side gates for veterinary inspection. The second cow waiting for testing is restrained with a manual gate that closes into the race. This gate prevents the cow from moving forward and an air operated butterfly gate prevents her retreating. The side panels that form the race can be removed in an emergency.

Gates in the race and the segregation pen allows cows to be moved from the segregation pen across the slatted return passage to the handling race for individual attention in the crush.

There is a raised personnel passage beside the handling race which runs the entire length of the handling area

allowing unobstructed access for students, stock persons and visitors.

With 3 disease testers operating, a row of the parlour (16 cows) can be tested in the time taken to milk the next row of cows in the milking parlour with minimal impact on milking throughput in the parlour. Key to efficient TB testing throughput is encouraging all cows to place their heads through the rails in the same direction as the crush is filled.



## **Herringbone Crush**

Routine group fertility treatment and pregnancy diagnosis is carried out in the herringbone crush. It is not suitable for TB testing as cow's heads are not individually restrained.

From the segregation pen, cows enter the herringbone crush between the two rails that form the crush. Due to the angle of the end gate, cows stand in an angled position at the breast rail, with their heads pointed towards the wall and their rumps presented over the rear rail for veterinary examination. An overhead restraining bar prevents cows from

rearing. The herringbone crush holds 16 to 17 cows. Smaller numbers of cows can be handled using a moveable "restraining bar". There is a raised personnel area at the front of the herringbone crush for ear tag reading. The wide area at the back of the crush gives an unobstructed area for work to be carried out. A touch screen computer provides access to the milking parlour software to enable retrieval of the cow's

treatment history. After use the area is volume washed.

Experience to date with the Future Herd has shown that 16 cows can undergo pregnancy diagnosis in under 10 minutes with one vet and one stock person in attendance. Design details of the herringbone crush are available in a separate technical note entitled:

**"Herringbone Crush Design Detail"**



### **Loading Bay**

Cows destined for transport off the farm can be loaded onto the cattle trailer through an external sliding door and gates positioned at the end of the handling facilities area between the herringbone crush and the handling race. The 2.5m wide passage area provided with a grooved floor surface ensures efficient loading onto the trailer with minimal stress to cows and stockmen.

### **Skills Training Area**

Cows drafted into the segregation pen can readily be moved to the skills training area. This area is equipped with 3 floor fixed cow clipping crates and a

designated hoof trimming crush with associated gates to load cows into the crates. The clipping crates have removable bars that facilitate instruction and student training. The gates also form the race used to bring cows to the bull pen for natural service. Hoof trimming equipment is stored next to the hoof trimming crush to aid the timely treatment of lame cows.

The floor in this area has a hexagonal groove finish and is volume washed after use. Open drainage channels and a 1 in 100 fall to the channel under the adjacent race aid cleaning.