

We showcase some new and innovative cow housing equipment

Good 'cow-house' keeping

Thinking of sprucing up your cow housing a little now the cows are outside? Or maybe you're contemplating an investment in an existing building or erecting a new one? Here are just a handful of new products that have recently been launched that may be just what you're looking for.

text **Rachael Porter**

Using sand to bed cubicles, but struggling to keep yards slurry free? How does a channel scraper designed to cope with sand sound? Shropshire-based producer James Brassington thought it sounded great. He's installed one on his unit, Creamore House Farm near Wem, where he milks 300 cows in partnership with his father Tim. In 2011, with the concrete yard in need of repair, James wanted to use the opportunity to install an 80m long slurry channel along the yard and down to the lagoon, and install an automatic channel scraper. Slurry from the cattle sheds and collecting yard used to be scraped up by tractor, and this would take up two or three hours each day. So a slatted channel would save on the labour needed to keep the yard clean.

But a few years ago James switched from bedding cubicles with straw to using sand to help keep environmental mastitis under control. Great for udder health, but not so good for slurry handling. The problem with sand is that it settles in channel systems and will eventually block the channel. He discussed this issue with Lancashire-based slurry handling specialist Storth Machinery when visiting the 2011 Grassland Event. And, as a result, the company has developed a new channel scraper specifically designed for use with sand, which uses pre-stretched rope with an 8.5-tonne breaking strain. Four months later, it was installed underground. The sand slurry scraper is set to run automatically four times a day in the winter, and in the summer is switched on manually when needed. "Having the slurry channel works really

well – we just scrape out the passageways in the cubicle sheds and the slurry drops down through the slats. It is then automatically taken to the lagoon, along with the parlour washings. It's saved us a lot of time and the cows are also cleaner," says James.

Robot scraper

Fullwood's Robotic Slurry Scraper is suitable for use within any size of cubicle housing with slatted passageways and the company claims that it offers a cost-effective alternative to chain scrapers,

Underground scraper can deal with sand



James Brassington: "The slatted channel and scraper save labour"

as well as lighter daily workloads. The scraper is fitted with high capacity batteries for long working intervals and operates at speeds of between four and 5.5 metres per minute, enabling it to cover large areas quickly and easily. It is available with one metre-wide or 2.1 metre-wide blades and can cover an area of 5,800 or 10,000 square metres per day, respectively.

"We believe that the robot is a cost-effective solution for slurry scraping in slatted housing," says Fullwood's Les Strickland. "It is also easy to maintain with few wearing parts and is an economic solution for automatic scraping."

The robot charges itself automatically by returning to a charging platform – located within the building for easy access – at the end of a pre-determined run. As soon as the battery reaches a pre-set level of charge the robot is ready for use and commences scraping again automatically.

Several pre-determined cleaning routes can easily be programmed into the robot's control unit. It is also able to turn on its own axis, enabling it to work in very tight conditions, so it can clean the narrowest of passageways and connecting walkways.

"Clean passageways are essential for good cow welfare," says Mr Strickland. "Regular removal of slurry prevents a build-up of muck and is known to have beneficial effects on hoof health as well as preventing the spread of mastitis. But keeping on top of muck handling can be a tiresome and time-consuming task. Automatic chain scrapers are used to good effect on many dairy farms, but can be costly and inconvenient to retro-fit.

"The scraper is quick and easy to install and works almost silently, causing minimal disturbance to cows. And if a cow blocks the robot's path, the machine will try four times to pass the cow without causing her stress or injury." The robot was first showcased at the 2011 Dairy Event and Livestock Show and is now available to order.

Housing innovation

Roundhouse 45, which is twice as big as the original Roundhouse building and capable of holding 180 cows, has been launched by the designer and builder Roundhouse Building Solutions.

The original Roundhouse (RH30) has a diameter of 30 metres, a circumference of 95 metres and an internal area of 720 square metres. At recommended stocking rates, it holds between 70 and 90 dairy cows.

But the Roundhouse 45 (RH45) has a

diameter of 45 metres, a circumference of 144 metres, and an internal area of more than 1,500 square metres.

It makes the round-building concept applicable for larger milking herds for the first time. And one has already been erected for that purpose in Nottinghamshire. This building, which currently has no internal fittings, will have three robots adjacent to it.

The design and construction of the larger building has been an engineering challenge due to the forces and weight involved in doubling the original size, according to its designers Geoff Simpson and John Allinson, from Barnard Castle. The RH30 comprises 13 tonnes of steel and a single sheet of high-tensile PVC-coated polyester fabric, which can be manoeuvred into place by hand during construction.

The RH45 comprises 40 tonnes of steel, with the roof made from two sheets that are joined together in-situ.

Both buildings are erected from ground-level using a hydraulic lift pack.

The RH45 costs around £149,500, compared to £57,000 for a RH30. However these costs do not include other elements of the project, such as the internal steelworks and groundwork. These costs, in most cases, will not be double for the larger building compared to the smaller one. If they are factored in then it is estimated that the overall RH45 project cost will be around twice as much as the RH30, giving a similar price per animal space.

A general project, excluding groundwork, would be around £1,050 per dairy cow place. This is comparable with the costs of conventional dairy buildings. |

Innovative design: the RH45 roof comprises two sheets of PVC-coated polyester fabric



Roundhouse 45: it's larger than the original RH35 and can accommodate up to 180 cows