

Virtual Mill

solving real-world training issues

by Vaughn Entwistle, Features Editor, Milling & Grain Magazine

The national association of British and Irish Millers (nabim) is the trade association that represents UK flour millers. nabim membership encompasses virtually all the commercial flour milling businesses in the UK. Associate members, businesses such as plant breeders, grain merchants, pest control companies, engineers or packaging manufacturers linked with the industry also play an important part in the Association. UK flour millers are proud of the role they play in society, delivering efficiently produced, high quality safe food for the consumer.

An emphasis on training

nabim is committed to the development of the people within the flour milling industry and places a high priority on education and training. For over 100 years nabim has been responsible for industry training. Its world-renowned flour milling correspondence courses form a Distance Learning Programme structured into seven modules. This programme provides an overview of the industry and process, and prepares students for examinations that lead to the nabim Advanced and Intermediate certificates in Flour Milling.

The flour milling Craft Skills Certificate provides a vocational qualification for the industry. Developed by and for the industry, it provides companies with both a training programme and a means of assessing practical competency in flour milling. The flour milling industry is a highly skilled and challenging industry, with training and education playing a vital role for employee development.

Distance Learning certificate

Each year, nabim runs seven modular courses to provide millers with an essential understanding and underpinning knowledge of the milling industry. The courses are studied by hundreds of students around the world and lead to the nabim Advanced Certificate in Flour Milling.



Below: Rollermill Training Room



The modules may be taken in any order or combination, so providing a flexible training package. For each module, students are allocated an individual tutor, to whom they submit four pieces of work during the course year; the tutors return this work with corrections marked and further guidance. The tutors are all experienced in the operation and management of flourmills, providing students with expert assistance in their training.

Further information can be found at www.nabimtraining.com where you can also enroll online.

The Virtual Flour Mill

nabim's latest training tool, the Virtual Mill, has been in development over the last two years. As the name implies, this training tool exploits virtual reality technology. By donning a virtual reality headset, milling students enter a three-dimensional simulation of a flour mill where they can wander about the facility, visit various floors that simulate the various processing rooms of an actual flour mill, and interact with the machinery. The virtual mill site currently contains training rooms on purifiers, plansifters and roller mills while the ability to 'walk around' the mill building from floor to floor will soon be introduced. Future development is likely to include a laboratory and a packing area. There is also potential for other uses and even for individual companies to build their own 'project rooms' within the virtual mill.

Three tutorial sessions were held in the virtual mill in early 2018 for our Module 3 students; students from 5 member companies (7 different sites) were involved and feedback was very positive.

Virtual milling

Mr Nigel Bennett, Secretary of nabim, explained the abilities of this state of the art training technology. "Don't expect Grand Theft Auto-style graphics, but people are generally impressed with the appearance of the Virtual Mill. You can only walk on the walkways, but you get the feeling that it's all there.

We try and make it as real as possible. In our next phase, you will be able to walk around the entire mill. So after the initial session in the meeting room, you will go off to the various training rooms. For example, you could start with the purifier room. Here you would find purifiers in various states of undress,

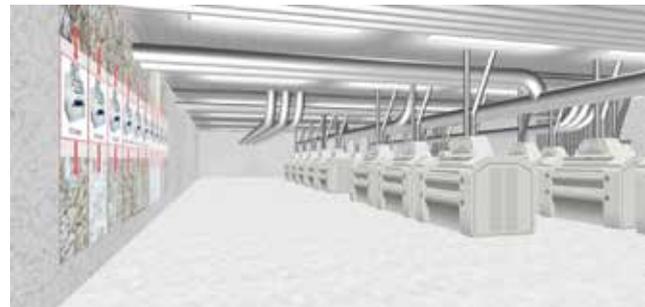


Above: Plansifter Training Room

Below: Purifier Training Room



Below: The Rollermill Floor



some with moving parts. Here you'd find the purifier, the cover numbers, and even the right sort of stock you'll get at each stage. If you click on it you would be taken to the Internet where you'll see the magnified pictures of stock at various points in the machine. There are similar things in the plant sifter room and the roller mill room. If you click on them, the sifters and roller mills will start running, complete with mill noises."

A series of blue and wheat coloured lines indicate the flow of material. If a trainee wants to look inside a piece of equipment, such as a purifier, they simply click the machine to go inside.

Mr Bennett cited the training benefits of the Virtual Mill. "The 2-D stuff in our training books is quite old, but when you put things in 3-D with moving animation, it becomes so much easier to understand. When we redid the mill module textbook, we had a beautiful diagram that demonstrated the flow through some over tails. We've now got that diagram in 3-D."

The Virtual Mill is on-going project, but once it's completed, users will be able to walk around the entire mill where they will encounter media boards in each room they can click on to go to any page in a training module textbook. "Although the virtual mill is something beyond what we've done before," Bennett says, "our plan is to incorporate all our other training resources within it. You can already watch our training videos and use our e-learning resource via the virtual mill, and our course textbooks can be placed on media boards and accessed too."

Virtual advantages

Bennett points out that the Virtual Mill benefits more than just milling students. 'You could have a food safety area with all your HACCP (Hazard Analysis and Critical Control Process) areas, so you can address customers' questions and concerns. It is a hassle taking customers into real mills because it's hard to communicate with them. But in the Virtual Mill I can click and get rid of the machinery noise.'

As already stated, the Virtual Mill is still a work in progress, and nabim will be developing the mill in the coming weeks, months and years. "We need to decide upon our priorities," Bennett explains. "After we've developed the mill building, we might focus on the laboratory, do simple guides on testing, or we might focus on wheat intake, or do the screen room. Packing

is another area we might focus on. We might look at providing learning support for maybe six of the seven distance learning modules. We may well build tasks on which people can be assessed, and we might introduce 'hazard spotting'. We will also determine whether the Virtual Mill can be used to help people prepare for entry into the advanced milling diploma, our highest level of qualification."

It seems the possibilities are endless. While in the meantime, individual companies are looking to develop the Virtual Mill for themselves. Bennett explains that there is scope for private companies to develop a room that only people from that company could get into. "You would not be able to get into your company room without accessing the whole virtual mill. There would be no additional fee payable to nabim unless we feel the need to seek contributions to the annual fee to the owners of the virtual environment in which the mill resides." But despite the hosting costs, there is huge scope to save money. "Imagine a multi-site company having a project meeting where no one has to get into a car," Bennett says. "And once the industry fully embraces the virtual mill, I am sure suppliers will be interested in having a virtual show room."

What was bleeding edge technology a few years ago has now become mainstream, and subsequently, affordable. "For years we thought this was out of our budget," Bennett says, "but like much of technology, suddenly it came within our budget. The hosting company we work with, Visit Ltd, got their experience working with multi-national corporations who have invested a lot of money in virtual experiences."

Costs for use

So what does all this cost?

"At the moment we discount the rates," Bennett explains, "but for the mill mentor who will be responsible for their use of the mill, it costs £175. We charge for each successive student £150, then £125 and so on. That pays for the virtual environment and for additional development. And we'll be building into that tasks upon which people can be assessed, and we might build in hazard spotting."

Mr Bennett added that, once users have access to the virtual mill, they are free to go there any time.

www.nabim.org.uk