



LSEMS TOUR

PART 1

FWP MATTHEWS

The team from Milling and Grain joined a group from London South East Milling Society for their annual industry tour. This year we were invited to see FWP Matthews' Mill and to Campden BRI. This edition focusses on our tour of Matthews' mill, where the modern meets the traditional. Be sure to keep an eye out for our review of Campden BRI in our September edition.

## ADAPTING TO MEET MODERN DEMANDS

by Andrew Wilkinson

**A**s you travel through the beautiful Oxfordshire countryside, amongst the clusters of yellow-bricked houses, smatterings of wheat fields, braying cattle and leaping lambs, you may well chance upon the hidden gem that is FWP Matthews' redbrick flourmill.

Situated on the outer extremities of the beautiful Cotswold hills, in the village of Shipton under Wychwood, this traditional mill produces a wide range of quality organic and conventional flours.

Matthews still use the original mill building that was commissioned in 1912, which housed a steam-powered mill that ground the wheat grown in local fields. Once the wheat had been turned into flour, it was then transported using eight dedicated rail carts, that delivered to their three original customers that included Huntley and Palmers in Reading, Peek Frean in Bermondsey and Jacobs in Dublin.

### War to late nineties

In 1950, the 60HP gas turbine engines, which originally powered the mill, were replaced by electric motors. The 1960's then saw the Matthews mill repurpose from making biscuits to making bread; specialising in the 50:50 or "national loaf"

In 1992 FWP Matthews Ltd became certified by the Soil Association to mill organic flour. Buying local grain and supporting the community is still of prime importance to the company.

In 2005 the mill was re-fitted with equipment to increase production and efficiency. Early capacity was 600 cwt of wheat per hour bettered slightly today by a staggering 6 tonnes per hour.

Over the past 20 years, FWP Matthews have enjoyed an exceptional period of growth; with their turnover overall increasing by almost fivefold. Back in 1998, they were turning over £1.5 million with just 12 staff. However, with a few tweaks and a great deal of hard work and investment, this has now grown to £15-20 million with 75 staff.

Today the mill runs 24 hours a day 7 days a week to keep up with demand, with continued investment in new equipment meaning that modern techniques are combined effectively with

traditional values; with the most recent sizable investment by FWP Matthews culminating with the opening of the Wychwood Building on 13th February 2009 by the Princess Royal.

### Heritage meets modern techniques

FWP Matthews have 11 silo bins, with a wheat capacity in excess of 600 tonnes. With their ability to hold such a large volume for such a relatively small mill, they can receive as many as five vehicles a day, with each delivery of twenty-eight tonnes taking approximately one hour to unload.

Before the incoming product is unloaded, it must first pass through the laboratory, where the wheat and flour is put through a series of rigorous tests before it is allowed to tip, such as protein level, moisture, Hagberg and hardness.

The incoming grain is then put through a gluten wash to determine protein quality, then weighed, then it's stretched on a ruler to determine its gluten content, which according to our guide Mark Riley is, old fashioned but it works.

Once approved, the grain is then fed through the destoner, which works using an adjustable density yoke. The grain is then fed through a chaff remover or Winnower, which features a vibrating horizontal screen that actually sorts the wheat from the chaff, with the latter being removed via suction.

Their new Satake Alpha Scan 'colour sorter' then separates impurities from wheat by colour, which in turn reduces the overall product waste, whilst "improving flour quality," especially their stoneground and organic flours. FWP Matthews Ltd was one of the very first flour-mills in the UK to use this leading technology.

Once destoned, winnowed and sorted, the grain then enters the screen room, where the grain is cleaned and water added. FWP uses French Grain to create some of their french products, as well as being the UK suppliers for Moul-Bie flour. They try and source as much wheat locally as possible. However, this is proving difficult as getting hold of English high protein organic wheat is hard to come by.

### Now in the speciality market

Other than wheat, the Matthews team also mill spelt and a lot of rye too. However, spelt is apparently "horrible to mill as is very



varied, is low in starch – so doesn't dress very well," as well as being "weak by conventional standards, so doesn't make a very big loaf, although the many health benefits makes it a popular flour"

Matthews were also keen to stress that although they do process a variety of different grains, they do take every care to ensure that they do segregate varieties, by either protein strength, or whether they are organic or not. With rye being the only low gluten product that Matthews produce.

The next stop for the grain is the typically loud roller floor. The rolls shear open the grains of wheat, and in doing so, separates

the white inner portion of the grain kernels from the outer skins.

Then, passing through a complex arrangement of sieves that separate the particles of broken wheat grain. The white particles of endosperm and semolina are then passed into a series of smooth rollers for their final milling into white flour.

The first step in the stoneground milling process sees the grain ground by four encased stones, that can be heard oscillating -- even through their seemingly bulletproof casing. No longer containing the original French burr stones, that have now long since been replaced by equivalent composite stones by Danish



manufacturers Engsko, the loud whirring of the machines is somewhat silent compared to the familiar drone of the rollers. Matthews rolling arsenal consists of seven rollers by Czech manufacturers Chepos from 1969; with the set of eight completed with the relatively recent addition of a GPS Synthesis roller.

A short climb up a narrow set of wooden steps takes you up to the second floor, which contained eight CPS – Semolina plansifters. These vast blue doored hulks gyrated wildly as the noise generated drowned out even the very loudest of voices, with the commotion creating a sensation that the floor itself was moving.

To ensure the quality of the flour is consistent it is tested at hourly intervals. It is at this stage that the bran and wheat germ will be ‘streamed’ back into the flour for the production of brown or wholemeal flour.

Other additives such as baking powder for self-raising flours and other legally required additives (such as calcium, niacin, thiamine and iron) are also added at this stage. The final stage is for the flour to pass into the packaging plant or the bulk bins ready for distribution.

### Quality – they’ve got it in the bag

The packaging plant at FWP Matthews presented an ideal of synchronicity, with each segment of the assembled machinery carrying out a very specific task, symbiotically with the component that either precedes or follows it; allowing it to pack as much as one tonne in half an hour.

The largest of the two bagging machines, manufactured by Belgian packaging solution providers Arodo only pack the 16kg bags, whereas the 1.5kg and 3 kg bags were packed using the Italpack bagging machine.

The Matthews flour bag itself has recently undergone something of a redesign too. Now roll bottom bags, they are stitched instead of glued, as according to our guide, “glue doesn’t work.” FWP Matthews also don’t use pinch bottom, and only use roll bottom and block bottom 16kg bags (however 25kg bags are supplied by Moul-Bie)

Once packed the flour is then stacked on wooden pallets before being transported to a nearby off-site warehouse.

### The winning formula

The mill at FWP Matthews presents the very best of both worlds. With both the traditional family orientated aspect, twinned with the application of modern technologies, the generations of millers at Matthews have adapted throughout the ages to accommodate to ever-changing demand.

Matthews stands as a testament to the ‘adapt or die’ market forces that millers have now faced for many years. Matthews obviously have a winning formula, and one that should see them well for many more generations to come. ☺

