



GREATER FELCOURT FARM NOW FELCOURT DAIRY FARM

The farm lies to the west of the Lingfield to East Grinstead road approximately 1 mile from Lingfield. The land was at one time part of the Surrey estates belonging to the Earl of Cottenham and before the first world war the owner was Hubert Sturdy, the resident of Felcourt Hall, now occupied by Rentokil¹.

It is thought that the original farm buildings were constructed between 1908 and the start of the war. They seem to be an amalgam of the first and fourth prize winners in a competition run by the Royal Agricultural Society. These plans were submitted by J W Hepton of Londesborough, Market Weighton and John Markwell Holmes of Grimsby. The plans have been slightly modified as they were for a 400 acre farm and Greater Felcourt Farm is 600 acres.

In the early 1980's a second complex of modern framed buildings was added for the housing, feeding and milking of the farm's Friesian herd.

The original buildings were constructed substantially in brick without ornamentation or embellishment to make them plain and strong and so to reduce construction and maintenance costs. The competition judges estimated a building cost of £2,500 which did not include a new farmhouse as there was already an adequate building on the site.

In 1919 the farm was purchased by Richard Borlase Matthews, an electrical engineer, to be used in his experiments into the use of electricity in agriculture. From the outset it was run as a commercial enterprise. Staff were paid according to the hours worked which could be accurately measured as they had to clock in. They were not given free accommodation but their wages were set a level where they could afford to pay rent of 7s 6d a week. All the commodities required and available on the farm could be purchased at wholesale prices.

A system of bonuses was introduced to increase productivity. At first, this was to be based on profits but it was realised that this was too remote and time delayed. So a weekly system based on productivity was implemented. A cowman would receive 6d per 100 gallons of milk produced, the drivers of tractors and other motors would be given 1s per week if they worked through without breakdown. This meant that greater care was taken in the handling of these vehicles.

¹ Rentokil have since vacated the premises and in 2008 Felcourt Hall was converted by Scandiahus to 8 separate apartments, which are all privately owned and go under the collective name of 'Felcourt Manor'

The 600 acres were divided into approximately three parts of 200 acres arable, 200 acres grass and a further 200 acres of woodland. The aim was to make the farm largely self supporting. The crops grown were used to feed, as far as possible, the poultry, pigs and cattle. The timber from the woodland was used in the construction of buildings for the pigs and poultry which led to the establishment of a small saw mill employing 2 carpenters.

The labour employed in the experimental work on the farm was not charged to the farm accounts except for actual services rendered. This meant that the farm's profitability could be accurately measured.

Electricity on the farm

In the beginning, electricity was generated by a water driven turbine situated at a lake about half a mile away. It was brought to the farm by overhead cables and distributed around the farm by a ring main carried on high poles fixed outside the buildings. The supply could be supplemented by an engine driven dynamo on the farm and, even when mains electricity became available, this was only used at night when it was cheapest.

Richard Matthews claimed to have implemented 67 different uses for electricity on the farm but not all of these have stood the test of time.

For many years scientists had been studying the effect of electricity on growing crops. At first the wires had to be placed near to the ground which meant that they interfered with normal cultivation. Sir Oliver Lodge developed a high tension discharge apparatus that could deliver up to 60,000 volts so the wires could be placed 10 to 12 feet above the ground. However, whilst in some experiments amazing increases in crop yields were achieved, (118% at Rothamsted), this could not be proved under normal conditions. It was concluded that, at best, an increase in yield of 20% was more likely and this did not justify the capital outlay and running costs.

Ploughing was carried out by using a two furrow balance plough pulled by cables attached to a portable electric motor. This is a similar system to that devised in the 19th century using a stationary steam engine. It was claimed that this was better for the soil as there was less compaction but the increased efficiency of tractors meant that this idea was not adopted.

It was in and around the farm buildings that electricity had its widest uses. Richard Matthews developed the Witton 5 HP Portable Farm "Drumotor". This could be moved around the farm, plugged into a suitable socket and used to drive all sorts of machines via a belt. Where machinery was in constant use such as in the milking parlour and dairy, permanent electric motors were installed. Even a simple task like inspecting livestock at night was so much easier with electric lighting. The farmer could enter the building at one end switching on the lights and exit at the other end, turning the lights off as he left.

Richard Borlase Matthews WH. EX , A.M.I.C.E, M.I.E.E., F.R.Ae.S

Richard Borlase Matthews was born on 1878 in Swansea and went to sea at the age of 12 with a shipping company in which his father had a financial interest. He then

served an apprenticeship in a South Wales tin plate works after which he took a degree in electrical engineering at London University.

After graduating, he worked for three or four years in America for the General Electric Company and then returned to England working for London Underground. The first world war was spent at the Air Ministry working on aircraft design and, shortly afterwards, he published a book of technical advice and data titled "The Airman's Pocket Book". At least one bulk order for this book was received from the American Air Force.

In 1919 he purchased Greater Felcourt Farm from Hubert Sturdy to further his interest in the use of electricity in farming. Some of his developments were marketed for a time by the General Electric Company. He also found time to act as a consultant electrical engineer and to write a number of articles for the electrical and agricultural press. He published a book in 1928 on electro-farming using his own knowledge and information collected on numerous trips abroad.

By 1930 active development work on the farm had ceased. It was let to tenants on condition that they continued to use his electrical apparatus. He now divided his time between consultancy work and the running of Felcourt School which he had founded in 1923. He died in a swimming accident in Anglesey in 1943. His son, M J Matthews, took over the farm in 1950 and it is now run by his grandson also named Richard Borlase Matthews.

Applications of Electricity to Agriculture including the farm, farmhouse and market garden

Food Preparing Machinery

Cake Breakers	Chaff Cutters
Corn Crushers, Kibblers and Grinders	Conveyors
Elevators	Ensilage Cutters
Food Steamers	Food Mixers
Grain Graders	Grain Feed Cutters
Grinding Mills	Hay Hoists
Potato Sorters	Pumps
Root Cutters, Pulpers and Slicers	Sack Elevators
Straw Trussers	Threshing Machines
Winches and Hoists	Winnowing and Sifting Mills

Livestock

Clippers	Food Mixers
Food Steamers	Groomers
Shearers	Ultra Violet Irradiation

Poultry

Automatic Time Switches	Bone Grinders
Brooders	Drinking Water Heaters
Egg Testers	Food Mixers
Foster Mothers	Grain Crushers

Grain Feed Cutters
Grist Mills
Incubators
Lighting for Poultry Houses
Plucking Machines
Ultra Violet Irradiation
Whitewashing Machines

Dairy

Butter Churns
Centrifugal Fat Testers
Cream Separators
Liquid Manure Pumps
Milk Circulating Pumps
Milk Coolers
Milk Separators
Pumps
Sterilizers
Water Heaters

Market Garden

Garden Frame Heating
Greenhouse Ventilation
Intensive Lighting for Plant Culture
Soil Heating

Cultivation

Electric Ploughing

Crop Treatment

Corn Curing
Hay Elevators
Threshing

Workshop

Drills
Forge Blowers
Grindstones
Saw Benches

Farmhouse

Bed Warmers
Coffee Percolators
Curling Tong Heaters
Fans
Floor Polishers
Grillers
Heaters
Insect Traps
Kettles
Lighting Fittings
Pumps
Refrigerators
Stimulators
Thermal Storage Water Heaters

Grinders
Hovers
Kibblers
Mixing Machines
Refrigerators
Water Heaters

Butter Workers
Clippers
Groomers
Milk Bottle Cleaners
Milk Clarifiers or Centrifuges
Milking Machines
Pasteurizers
Refrigerators
Ultra-Violet Irradiation
Whitewashing Machines

Greenhouse Heating
High Tension Discharge Machine
Moth Traps

Hay Drying and Curing
Hop Drying

Emery Wheels
Glue Pots
Motors
Soldering Irons

Bells
Cookers
Dish Washers
Fires
Food Warmers
Hair Dryers
Ice Cream Machines
Irons
Lawn Mowers
Night Lights
Radiators
Sewing Machine Motors
Suction Cleaners
Toasters

Towel Rails
Urns
Ventilating Fans
Wash Boilers
Water Heaters

Ultra-Violet Ray Apparatus
Vegetable Steamers
Warming Plates
Washing Machines
Wireless Sets

© Michael Chappell
May 2006

Acknowledgements

Country Life April 17th 1926
Journal of the Historic Farm Buildings Group Vol 5 1991
Richard Borlase Matthews