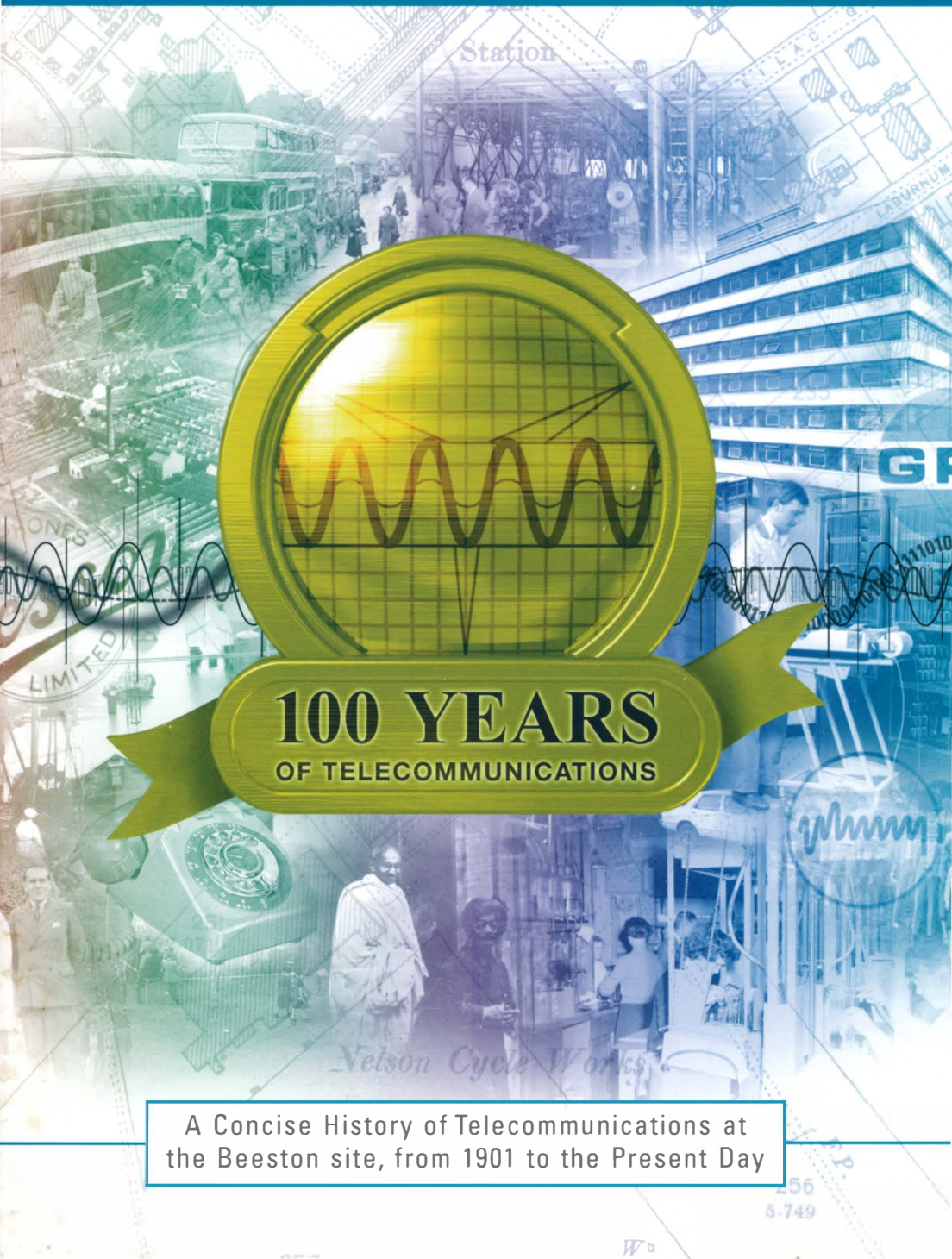
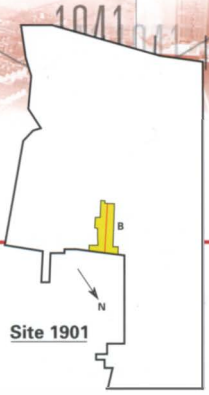
SIEMENS

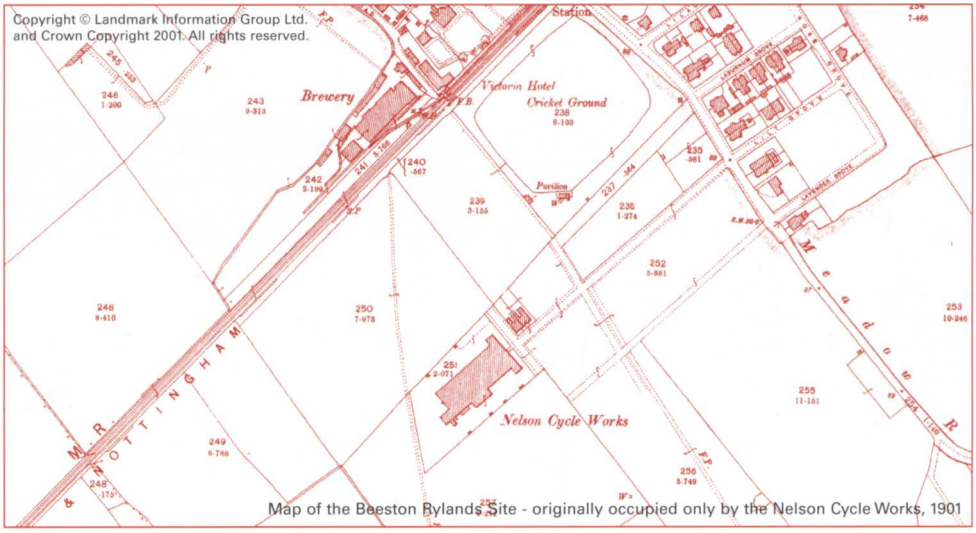


A Concise History of Telecommunications at the Beeston site, from 1901 to the Present Day

100 Years of Telecommunications



Welcome to the Beeston Site



Map of the Beeston Rylands Site - originally occupied only by the Nelson Cycle Works, 1901

This booklet illustrates the development of the Beeston Site from 1901 to the present day. This period has seen a succession of owners and a multitude of name changes but the site has always been immensely successful in developing and producing high technology products, predominantly for Telecommunications markets.

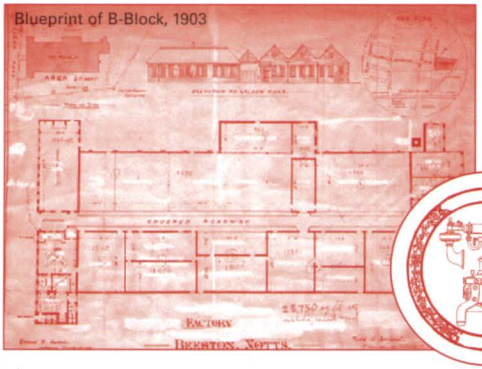
In the early 1800's the area known as Beeston Rylands consisted largely of fields and a few houses around the 'Boat and Horses' and the original 'Jolly Anglers' public houses, both of which stood near Beeston Lock on the canal. (The current Jolly Anglers is a much newer building on Meadow Road.) Serious development of the area began in 1839 when the railway and Beeston Station were built by the Midland Railway Company. The Victoria Hotel was originally built the year after and rebuilt in 1899.

The land for the Cricket Ground, shown in the map, was acquired by the railway company in the 1840's and laid out for cricket by Samuel Watson (a partner in a local Silk Mill) in 1866. It was said to be one of the finest privately owned cricket grounds in the country and W.G.Grace played there in 1870 and 1875. From 1877 to 1880 the ground was also briefly home to Notts County football club.

The factory shown is the 'Nelson Cycle Works' built by the Humber and Goddard cycle company in 1896 as an extension to their premises in Beeston. They built bicycles and lace machinery until 1901 when they sold the site to the National Telephone Company. At the time the telephone was an expensive luxury, London boasting only two telephones per thousand of population in 1895.

100 Years of Telecommunications

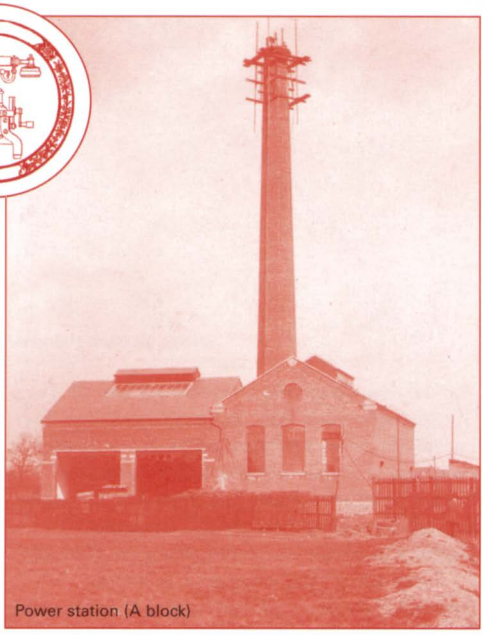
1901-1926: The Early Years

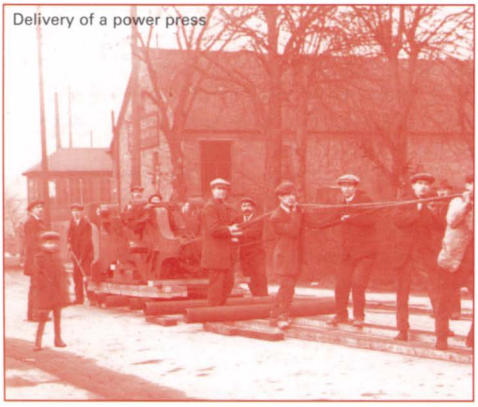


Blueprint of B-Block, 1903

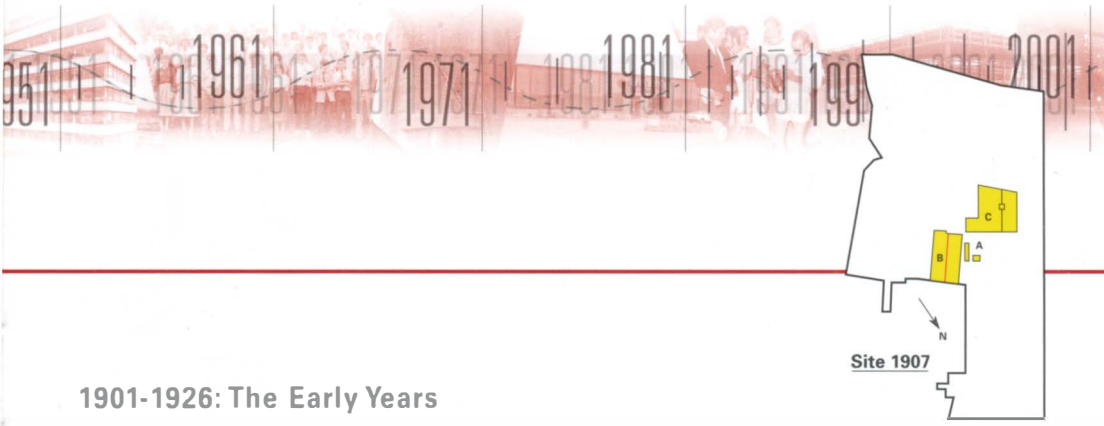
The Nelson Road factory was badly damaged by fire the same year the new company took over and the opportunity was taken to extend and improve the premises. The blueprint shows plans for the replacement building, which was, and still is, known as B-Block.

The National Telephone Company employed 130 people on the site in telephone repair and experimentation activities. Their exclusive ownership of the site ended in 1903 when the British L.M.Ericsson Manufacturing Company (BLME) was formed. This was a joint venture between the National Telephone Company and Swedish firm of L.M.Ericsson who wanted to establish a UK manufacturing base.

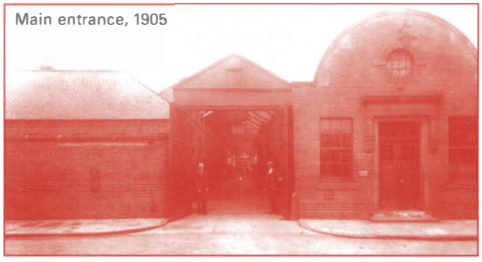

Power station (A block)


Delivery of a power press

It originally covered around one acre but has been considerably extended and updated over the years. The original corridor through the heart of the building is still in use. The picture shows a power press being moved from the railway to the new factory. In the background is the old level crossing which was at the Nottingham end of the Beeston Station platform.



1901-1926: The Early Years


Main entrance, 1905

A power station (A block) consisting of a boiler room and turbine room was added to provide electricity for the factory machines. It had coal fired boilers with a 120ft chimney. The chimney was a distinctive feature of the site until 1989 when it was demolished. The pictures show the chimney under construction.

In 1906 a woodworking shop (C-block) was added for the production of 'Cabinet work' and this made the factory almost totally self sufficient with the complete process for turning raw materials into products on site. They even made their own nuts and bolts! The factory was successful and was regarded as a 'model' for others to follow particularly with regard to the working conditions of the employees. The Electrical Review of July 1908 describes the early air conditioning employed in the workshops, the first aid and canteen facilities and states that, 'The provision made for the personal comfort of the employees is especially worthy of notice, as British factories are not always satisfactory in this respect.'


First Aid facilities

There were around 700 employees. Factory wages were £1-12s/week and Junior clerks received 7s-6d/week.

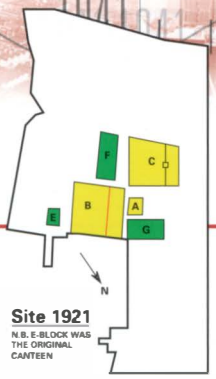

Testing

As well as telephone instruments the factory also produced manual switchboards in beautifully polished mahogany and various items of office furniture.

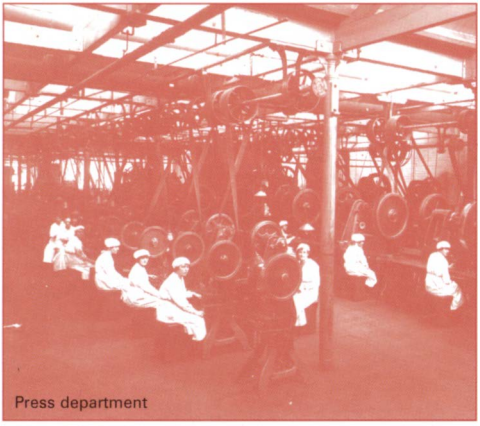
In 1910 special handsets were built for Scott's 2nd Antarctic expedition the requirement being that they would not embrittle and crack at low temperatures or stick to the user's skin.


Tool designing office

100 Years of Telecommunications



1901-1926: The Early Years

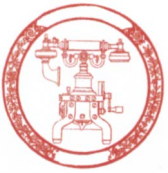

Press department

In 1911 a subsidiary called Auriphone was established to make hearing aids. Microphone granules were made by coating birdseed with carbon. Perhaps the technique was not perfected because the Auriphone business never thrived and was shut down in 1922. In 1912 the National Telephone Company was taken over by the Post Office and relinquished control of BLME to LM Ericsson. By this time there were around 900 employees.

During the First World War many more women were employed and work diversified to include armaments, portable communications equipment, radio microphones and other equipment. There was a Zeppelin sighting over the site in January 1916 which caused much excitement, but no harm was done.

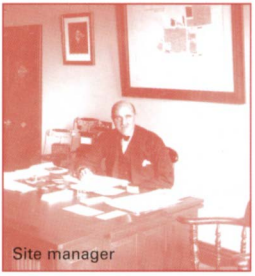
After the war, working hours were reduced from 51 to 47 per week. In 1919 the athletic club was founded and used the old cricket ground as their sports field, although at this time it was not actually owned by the company.

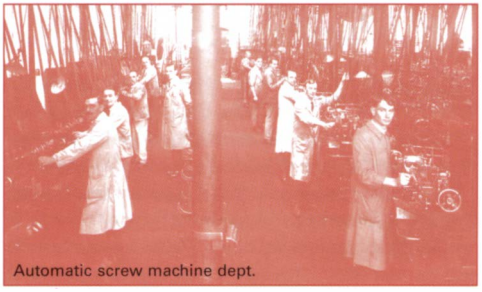
Development of the site continued and it was still regarded as a 'state of the art' facility. An article appeared in 'Engineering Production' December 1921 describing works covering 7 acres with 1300 employees. It concluded that 'The Ericsson works constitute an excellent example of a modern self-contained factory.'

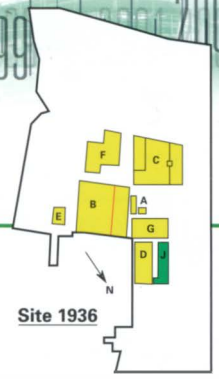


The market for telephones and switchboards was developing slowly and to keep the factory busy the product diversification seen during the war years continued. There was production of valve radios and crystal sets and the introduction of a range of mining telephones specially adapted to be safe for use underground.

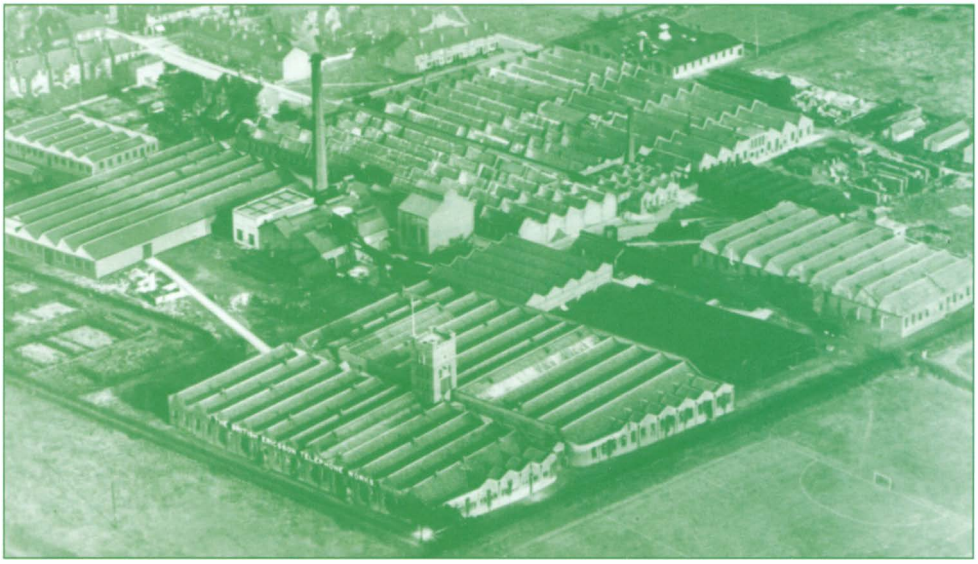
In 1922 the Company became a minor founding member of the BBC. The original bowling greens and croquet lawn were laid, where Z and EE blocks are now.


Site manager


Automatic screw machine dept.



1926-1961: Ericsson Telephones Limited



Ericsson Telephones Limited (ETL), a wholly British owned company, was formed in 1926 when LM Ericsson sold their share of the company. The market for telephones was finally taking off but there were still only 33 telephones per thousand of the population in the UK at this time, so there was a huge market waiting to be addressed. Automatic telephone exchanges using 'Strowger' electromechanical switching techniques were 'state of the art' technology at the time. To meet demand for the new 'automatic exchanges' the main supply companies (Including ATM (later AT&E), Siemens and GEC) signed a 'Telephone Exchange Equipment Bulk Supply Agreement' in 1923. This avoided competitive tendering, enabled shared developments and provided the basis for a period of sustained growth in the UK telecommunications industry. ETL did not sign up until 1929 but there followed a period of rapid growth in the site through the 1930's. The aerial photo above shows the site in 1932. Note there was still a lot of undeveloped land with football fields where 1F, R and K Block stand today. All of the major buildings in this photograph still exist today, although part of C block and the water tower (in the foreground) have gone.

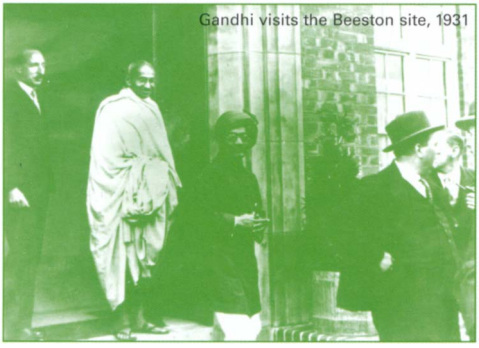
In 1930 there were 2000 employees. The company bought the Cricket ground by the railway station for use by the athletics club and in 1933 a pavilion was built. Funding for the pavilion was partly obtained from employee contributions at the rate of 1d per week!

100 Years of Telecommunications

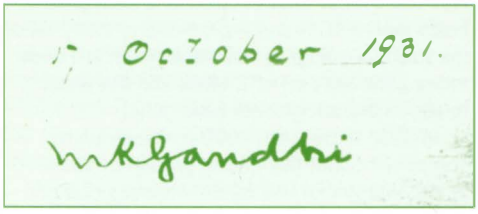
Site 1947

1926-1961: Ericsson Telephones Limited

A new diversion for the company was the manufacture of Racecourse Totalisators. These were complex devices for aggregating and displaying betting information. They were installed at Ascot, Redcar, Nottingham and many other racecourses until 1941 when the business was sold.


Gandhi visits the Beeston site, 1931

Gandhi visited the site in 1931. His nephew was here as a work experience placement. The picture shows Gandhi leaving the old office entrance, which is now part of the business park. Below is his signature from the visitors book.

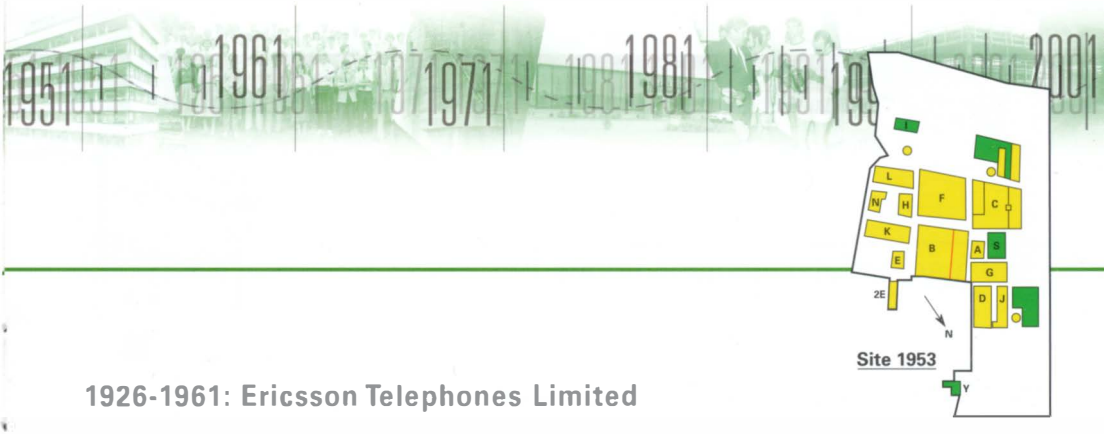


"By invitation of the management," Beeston Carnival Queen (Miss Florence Oram) visited the Ericsson's site in August 1936.

The Nottingham Evening News carried the story and a photo of Site manager Johnny Engblom with his wife, the carnival queen and her attendants on the croquet lawn behind the original canteen, where the Z block car park is now.

Johnny Engblom managed the site from the mid 20's until the start of the Second World War. He was a Swedish born, extremely talented engineer who guided the company through a period of growth. He was very strict and was feared and probably hated by many of the workforce, but despite this he had a reputation for looking after employees. There are many stories told about him. He apparently insisted that buildings were constructed with sloping window sills to discourage employees from bringing in pot plants or ornaments! He is said to have been briefly interned at the start of the war as an 'alien' due to Sweden's neutral attitude to German troop movements, but he returned to the site after the war as a guest.


The Carnival Queen with the site manager and his wife



1926-1961: Ericsson Telephones Limited

The Second World War had a dramatic effect on the site. Three very strong concrete air raid shelters were built and buildings were camouflaged. The factory was working to capacity day and night with 85% of the work for the armed forces. Products included radio, radar, bomb sights and bomb releases for the RAF, power units, special paints and varnishes, 500 tons of aluminium powder (for bomb manufacture) and numerous field telephones and switchboards. Various employee 'perks' were introduced including 'Music while you work' and an on site hairdresser. By the end of the war there were 5,500 employees, mainly women.

The post war factory continued to grow. The working week was reduced to 44 hours, a training school was established and the first craft apprentice scheme was developed. This was the forerunner of the various apprentice and graduate induction programs that have given the site a reputation for excellent training over the years. The picture below right shows the original training school and staff in 1947.

Severe flooding, 1947

The site was badly flooded in 1947 but remained open with employees carried to work in company lorries.

The current sports field was acquired by the company for use as a football ground. Approval had to be sought from the Ministry of Agriculture and Fisheries for its use as a sports ground. It did not become the main sports field until 1964.

100 Years of Telecommunications

1926-1961: Ericsson Telephones Limited

This photo shows the main entrance on Nelson Road decorated for the Coronation of Queen Elizabeth in 1953.

Through the 1950s ETL supplied products for use in both Public and Private telephone exchanges. The company continued to be almost totally self sufficient, its processes converting raw materials into the finished products. Metal working continued to occupy a large area of the site, mainly in the original B Block.

Electronics was growing in importance as an activity on site and a valve facility was established for the design and manufacture of 'cold cathode' valves.

Queuing to leave work, 1955

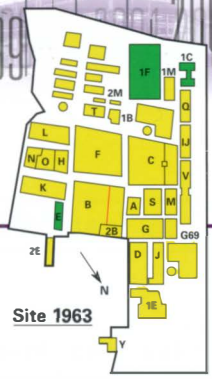
The 'new' Valve Lab

These offered superior reliability to conventional 'heated' valves for use in telephone exchange equipment. One of the products designed on site was the 'Dekatron' which was a counting and numeric display device used in the first atomic clock.

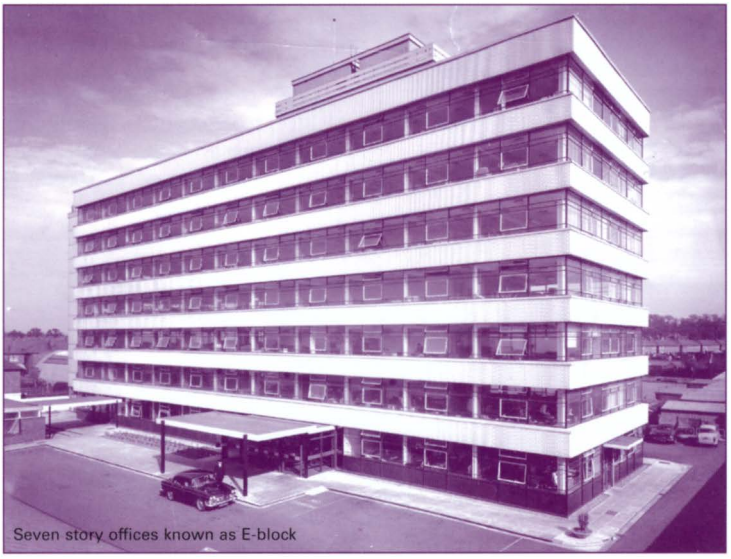
Towards the end of the ETL era there was a considerable amount of new building development on the site. This included a line of 2 storey buildings running parallel with and alongside the railway (V, IJ, Q) and a special building for reed relay manufacturing which was nicknamed Pollards Palace after the executive John Pollard who oversaw its construction. Few of these buildings remain today.

The canteen/ballroom complex (1E Block) was built in the late fifties and included at least three categories of dining area from the main canteen to the executive dining room. The executive dining room and adjoining bar still exist but are no longer used.

In 1959 an ETL employee W.J.Avery helped to design the BT.706 telephone which was the standard BT phone for many years and the first instrument to be available in a range of colours. It was known internally as the 'Etelphone'.



1961-1988: Plessey


Seven story offices known as E-block


E Block construction

In 1961 the Company was acquired by Plessey along with the AT&E group from Liverpool and merged to form a new group embracing civil and defence electronics and communications. Beeston was the main site for the 'Private Communications and Data Systems' division. There were around 7000 employees on site at this time.

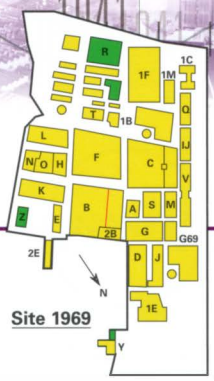
Plessey continued to develop the site and in 1962 built the 7 storey offices and engineering departments known as E-block, currently occupied by Marconi. EE block was added in 1975.

Employee training facilities were improved with a new training centre (1C block) built in 1961 but recently demolished after the training school moved to K-block.

A new purpose built medical centre (1B block) was also built in 1961.


E Block interior

100 Years of Telecommunications



1961-1988: Plessey

The main stores (R block) were built in the mid 60's as well as sales offices (Z-block). A warehouse and shipping block (W block - now refurbished and home to Siemens Applied Automation) was built in 1976.

Strowger was still being built on site but new exchanges were either of the Crossbar type (electromechanical switching) or TXE/Pentex (Electronic Control and reed relay switching). The TXE systems (called Pentex for export markets) were designed at Beeston and were one of the principal products that enabled Plessey to win the Queen's Award for Exports in 1978.


Roger Marshall and H.J. Bowering present football trophies in 1968

The Plessey years were the heyday of the sports and social club with more than 6000 members and a huge range of activities supported. The club won the 'Club Mirror Sports Club of the Year' Award in 1976.

Annual Sports and Gala Days attracted up to 20,000 people and included invitation races attracting entries from Olympic class athletes.

Sir Garfield Sobers played on the ground at least twice appearing for Notts.CC in benefit matches against the Plessey cricket team. On both occasions Notts.CC. won but Plessey were 'far from disgraced'!


Annual Christmas charity toy collection

Childrens Christmas parties catered for up to 1,800 youngsters.

1961-1988: Plessey

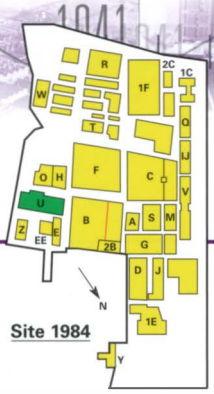
In 1976 the Abbeyfield Road Digital Technology Centre was opened in Lenton to enable the development of digital switching technologies. Initially, the PDX was developed and manufactured there.
In the early 80's the iDX was designed and successfully launched into the newly liberated telecom market brought about by the privatisation of BT. The iDX was the first of a long line of digital switching systems which are still being developed and sold today as the Realitis range.


Assembling novelty Mickey Mouse phones

The Abbeyfield road digital technology centre

CDSS/Monarch (small to medium size) and DKS (Keysystem) were other very successful digital systems developed in this period.

Telephone manufacture continued to be a major part of the site activities including novelty phones such as the Mickey Mouse model.



100 Years of Telecommunications

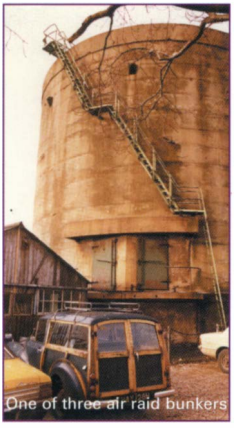
1961-1988: Plessey

The digital technologies used by systems like the iDX considerably reduced the cost of telephone equipment and there was a huge market in the 1980's. The factory struggled to keep up with demand of up to half a million a year. Production of the new technology took place in U-block or 'High Tech' as it was known. It was built in 1981.

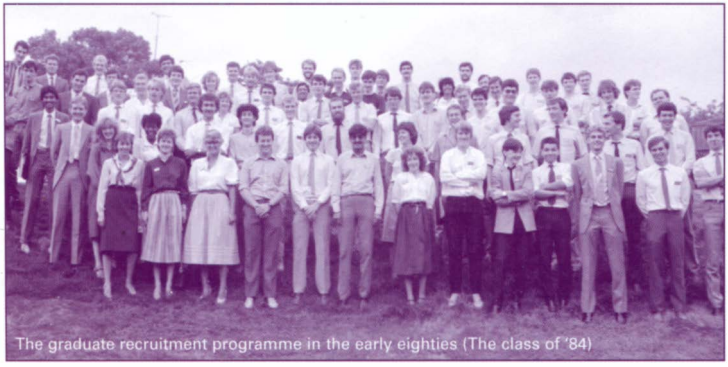

The 'new technologies' of the eighties

There were large annual graduate intakes during these years, mainly into engineering to provide the design resource needed.

Also extensive site modernisation as manufacturing methods moved from labour intensive electromechanical technologies to mass produced, circuit board based technologies. Many old buildings were demolished without any trouble but the three air raid towers proved a much tougher proposition. It is said that the first contractor who attempted the job went bust because he had agreed a fixed price for the job and seriously underestimated the work involved. There was also a 'spoof' quotation for the demolition involving a Dambusters style air raid with bouncing bombs dropped over the nature reserve and targeted to land on the unwanted shelters.

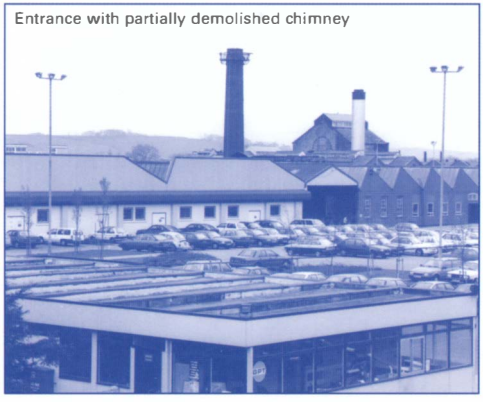

One of three air raid bunkers

The late 80's saw the construction of a new access road 'Technology Drive' and the Business Park was established in partnership with the local council. It was housed in the refurbished 'D' and 'J' blocks and is still a thriving part of the site today.

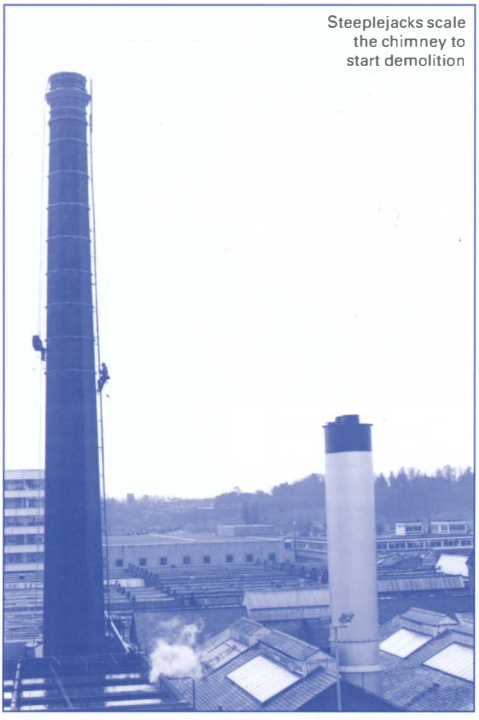

The graduate recruitment programme in the early eighties (The class of '84)

1988-1998: GPT

In 1988 GEC Plessey Telecommunications was formed as a joint venture between GEC and Plessey. The name was soon changed to GPT when Siemens and GEC combined to take over Plessey in 1991. At this time Siemens had a 40% share of the Company. The Beeston site continued to have responsibility for both public and private switching systems but by this time the telephone manufacturing operations were being shut down as they were no longer competitive with products made in the Far East.



Entrance with partially demolished chimney

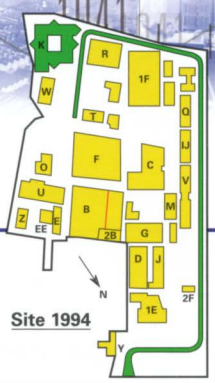


Steeplejacks scale the chimney to start demolition

The old boiler house chimney that had been a feature of the site since 1904 was finally demolished in 1989 and the old boilers removed. These had not been used for electricity production for many years but instead provided steam to the site for heating and use on the shop floor. These days buildings are individually heated and there is no longer a central power station. Although the original turbine room still exists it has been stripped of machinery and is used for storage.

An old boiler is 'inched' out

100 Years of Telecommunications



Site 1994

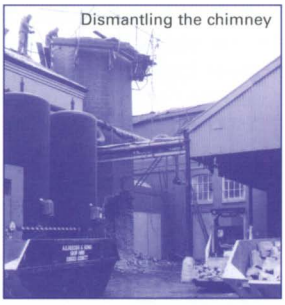
1988-1998: GPT

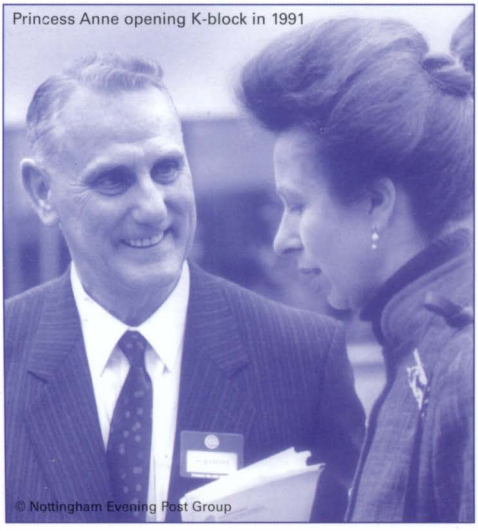
In 1990 there was a family Open Day with guided tours of the site and demonstrations of production facilities. At this time the workforce had reduced to 3000 employees on site with 300 at Abbeyfield.

K block was originally built to house the Abbeyfield road engineering staff and was officially opened by Princess Anne in 1991. Today it also houses the training school.


Shop Floor 1990

The GPT years saw extensive site rationalisation with a continuing reduction of the number of employees as the market for new digital switching systems became saturated.


Dismantling the chimney


Princess Anne opening K-block in 1991


The finished K-block

An exciting development during these years was the CT2 cordless handset. This was a first generation digital cordless phone intended for use at home, at work and in public places served by special base stations and was a forerunner of the mobile phones we take for granted today.

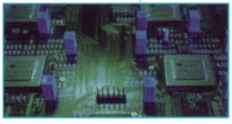
Digital switching was still the main product and revenue earner for the site. The Realitis DX was first introduced in 1995 and is still being developed with the latest version, the DX150R, launched recently.

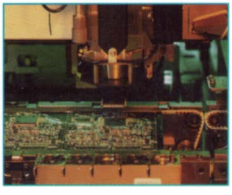
SIEMENS

1998-Today: Siemens

Siemens GEC Communication Systems was formed in 1997 when Siemens increased their share of the company to fifty percent and assumed management control. A year later Siemens finally bought full ownership of the company and the name was changed to Siemens Communications Limited or SCL. SCL only had responsibility for private networks. Public networks remained on site under GEC (now Marconi) ownership, and more recently Siemens Automation and Siemens Power Generation have arrived on site.

Manufacturing representatives at the Awards Ceremony



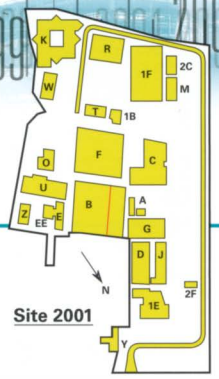


Siemens were keen to develop Beeston but it was quickly realised that the site could not be supported by Telecommunications activities alone. The Contract Manufacturing Service was introduced as a way of increasing work for the factory. This was quickly followed by Contract Design Services who sell our Engineering expertise. These activities have proved to be very successful and the site has won a number of awards, including:-

- Best Factory Award.
- Contract Engineering Innovation Award.
- EFQM Midlands Best Practice Award.

The Judges Special Award in the 1998 'Management Today Best Factory Awards', in association with the DTi and Cranfield School of Management was presented for '.... truly outstanding technical performance, in the manufacture and test of some of the most complicated and demanding products in the electronics industry'.

100 Years of Telecommunications



1998-Today: Siemens

Roger Andrews receives the Innovation Award

The 1999 Management Today Innovations Award was won by engineering for the redesign of the Realitis 6.1, the judges commenting on our 'ability to interweave engineering and manufacturing processes' resulting in 'an impeccable process'.

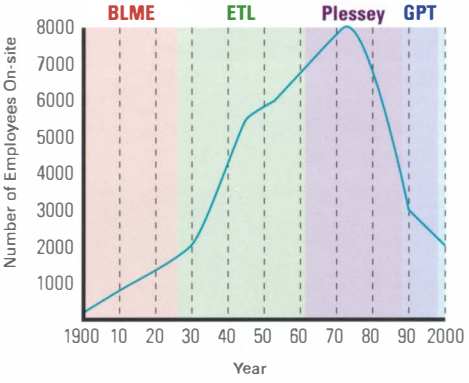
Excellent processes also contributed to SCL winning The European Foundation for Quality Management (EFQM) Midlands Best practice award last year.

This was won by SCL after several years of self assessment and improvements against the EFQM benchmarking model.


Phil Tizzard receiving the EFQM Award

In an echo of its early years the business is once again seen as a model of best practice for others.

Today there are approx. 2000 people on site working for Siemens Communications Limited, Siemens Applied Automation, Siemens Power Generation, Siemens Traffic Controls, Marconi and the Business Park.



The centenary of continuous development of the Beeston site is a historic moment, which also marks the start of the next hundred years, during which many more changes are sure to take place.

Paul Maker unveils the 'Welcome to Beeston' sign

Acknowledgments

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Siemens Communications Limited, one of the UK's leading telecommunications suppliers, offers a full choice of technology solutions from simple telephony through to full network outsourcing. The company operates centres of competence for research, development, manufacturing and support throughout the UK and in a number of international markets. It has a turnover in excess of £250 million and is part of Siemens Information and Communication Networks, the global leader in business communications.

Printed in England