ANNUAL REVIEW 1986

logica

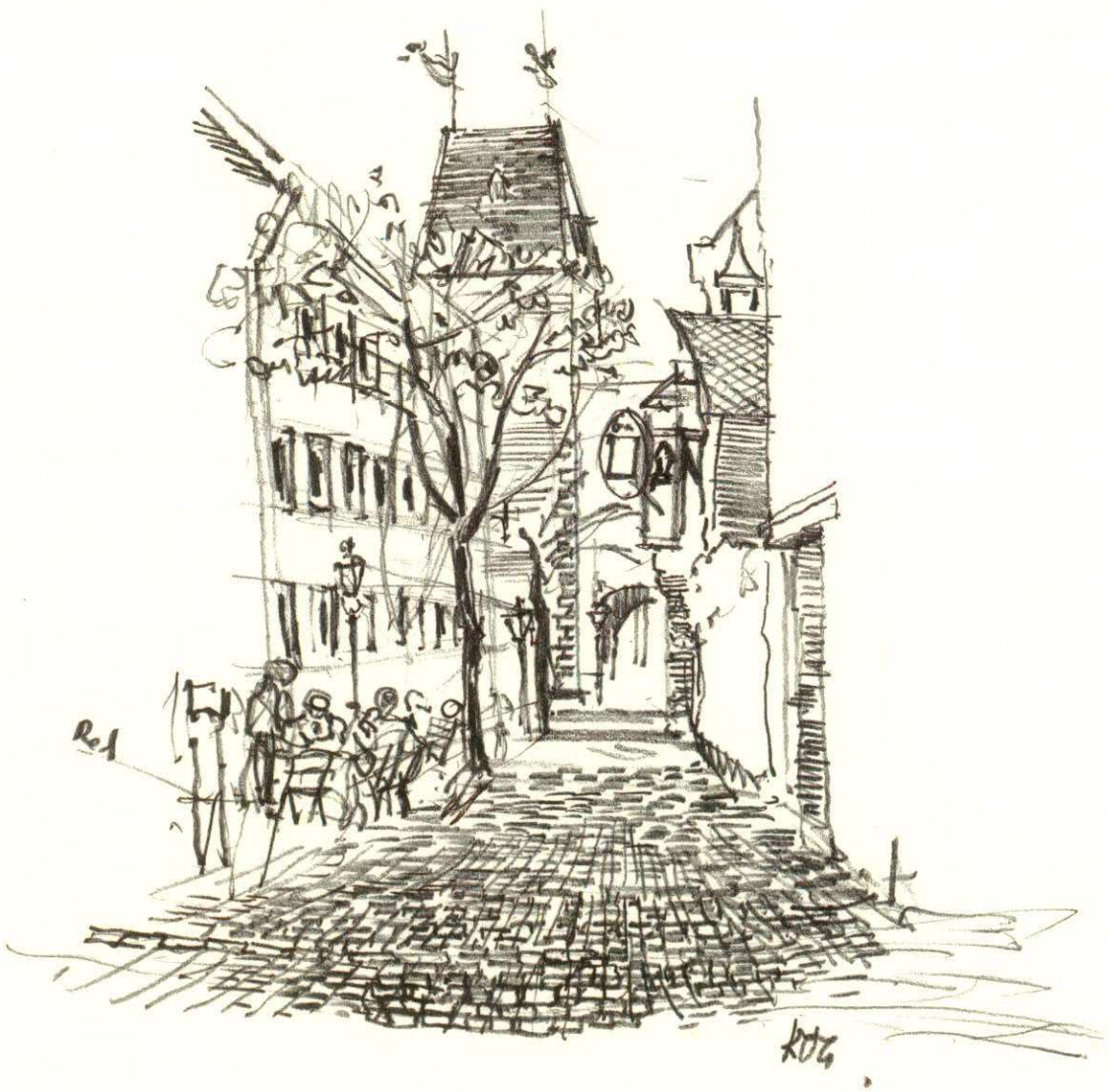
INTRODUCTION

Founded in 1969, Logica has grown steadily to become one of the world's leading suppliers of computer software, systems and consultancy.

Our largest single activity is designing, developing and implementing custom-built software and integrated systems. Systems kernels – reusable hardware or software components – are playing an increasingly important role in our business. They enable us to transfer proven expertise around the world and to provide cost-effective, highly tested solutions to clients. We also undertake consultancy assignments in computing, communications and management sciences for both users and suppliers of information technology products and services. We apply these skills across a broad range of market sectors around the world.

Logica's business and activities during the year ended 30th June 1986 are reviewed in detail in this report. We have selected a variety of key projects undertaken or completed during the year to highlight the breadth of our skills and expertise across our ten principle market sectors. Further sections are devoted to Logica's greatest asset, its staff, and to a range of research and development activities.

Each year we select a visual theme to illustrate our Annual Review. This year we commissioned the artist Keith Grant ARCA to produce a series of paintings on the theme, "Logica at work". The paintings – of Logica people, locations and projects from around the world – give an impression of how we work, the diversity and expansion of our operations, the variety of projects we undertake and the international nature of our business.



Street scene, Frankfurt

The year was marked by a major change – the withdrawal from operations in office automation. In the early part of the year the importance of these events tended to overshadow the extremely strong performance of the continuing business. The report shows just how well Logica came through this difficult phase with sharply increased turnover and operating profits.

Financial results

Turnover of the mainstream business was £87.0 million, compared with £62.3 million in the previous year, a growth of 40%. Operating profit was £7.5 million, compared with £4.5 million in the previous year, a growth of 65%. Profit after interest and before taxation was £6.8 million, compared with £5.0 million in the previous year, a growth of 36%. With a tax charge of 38%, profit after taxation was £4.2 million, compared with £2.3 million in the previous year, a growth of 84%. Earnings per share on an expanded share base were 10.07p, compared with 6.95p in the previous year, an increase of 45%. For ease of comparison, last year's figures exclude office automation from the results.

The losses incurred on withdrawal from office automation have been treated as extraordinary charges. The total extraordinary charges of £12.2 million were well within the provisions then made.

At the end of the year net cash balances stood at £8.3 million, compared with a net overdraft of £11.9 million at the beginning of the year. This was the result of new capital of £15.1 million raised in January 1986, a positive operating cash flow and a net cash surplus from the disposal of office automation assets.

The directors propose a final dividend of 1.00p per share net.

The year at a glance

Turnover	**£87.0 million**	**+39%**
Operating profit	**£7.5 million**	**+65%**
Pre-tax profit	**£6.8 million**	**+36%**
Post-tax profit	**£4.2 million**	**+84%**
Extraordinary items	**(£12.2 million)**	**–**
Earnings per share	**10.07 pence**	**+45%**
Dividends per share	**1.00 pence**	**–**
Staff at year end	**2,350**	**+27%**

Withdrawal from office automation

The decision to withdraw from office automation had already been taken by the start of the year. Intense competitive pressures meant that Logica could no longer continue on its own in the market: the scale of our operations was just not sufficient. Cuts were made at the start of the year to stem losses whilst we continued to search either for a partner or the outright sale of the operations. In the absence of any satisfactory offers, the complete withdrawal was announced in December 1985.

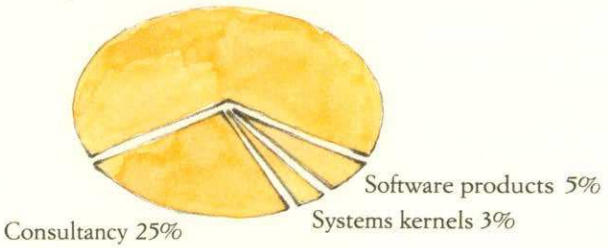
The closedown was markedly more successful than envisaged. In the USA, Intelligent Technologies was sold rather than closed down. In the UK, demand for product from VTS after the closedown announcement, was such that profitable shipments continued until the end of June. Co-operation from clients and suppliers was excellent. And, above all, the dedication of the staff of Logica VTS throughout the shutdown remained outstanding. In total, the closedown cost was £3.7 million less than provided for.

It is disappointing that we have been forced to close Logica VTS. The company had expanded rapidly and played a significant part in the growth of Logica. But whilst the withdrawal is sad, it does allow concentration of all resources on the base software business with its huge continuing potential for growth.

Operations

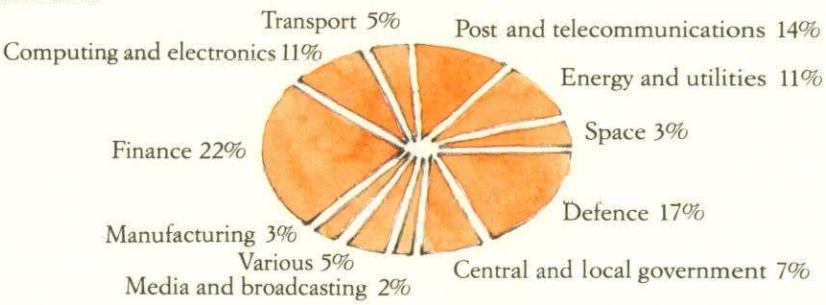
The split of turnover into broad categories shows 25% in consultancy and project management, 67% in custom-built systems (of which 12% is supply of hardware) and 8% in systems kernels and software products. The distinction drawn between systems kernels and custom-built systems is less and less appropriate. The system kernels we develop, such as MASTER CONTROL™, FASTWIRE™ and ON/2, usually form an integral part of the total systems we supply in areas like supervisory control and data acquisition, electronic funds transfer and retail banking.

Analysis of turnover by activity



The analysis of turnover by sector continues to show the very wide range of Logica's client base. The finance sector represented 22% of turnover: Logica is now one of the clear world leaders in providing consultancy and systems to banks, security dealers and stock exchanges. Another major area is defence, at 17% of worldwide turnover and over a quarter of the UK-based activities. Post and telecommunications form an increasingly important market in all countries in which we operate, as does our work for computer manufacturers.

Analysis of turnover by market sector



The international split of work was 55% in the UK, 26% elsewhere in Europe, 10% in the USA and 9% in the rest of the world.

In the United States, Logica had a profitable year with increased sales and turnover. Strong sales were secured for FASTWIRE for international funds transfer. Major banks in the US and Europe have installed FASTWIRE and several have purchased multiple licences for their operations around the world. The New York-based operations were consolidated into a single office. The costs associated with the disposal of the surplus space have been treated as an extraordinary charge. The Massachusetts-based Systems Engineering Division continued to expand, tripling turnover and staff during the year.

In Australia, Logica had an outstanding year with turnover up over 50% and an excellent record of profit. New expanded offices were taken in Sydney, Melbourne and Canberra and the client base widened. A key contract is the BITS project, where Logica is providing the software for the high value funds transfer system, which is being set up by the four major Australian banks.

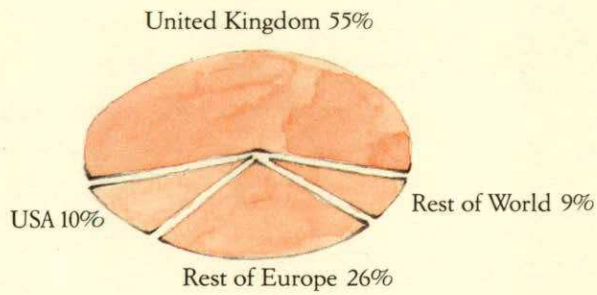
Jardine Logica completed the computerised trading support system for the new unified Stock Exchange of Hong Kong. The great success of the system is attracting attention from other stock exchanges around the world. A new company was started in Malaysia with a first major contract to supply a system to control water distribution throughout the state of Selangor. After year end a new company was started in Taiwan.

In Italy, Logica General Systems completed a highly successful first year as a part of the group. In addition to the wide range of custom contracts, the company has a very strong software products operation accounting for over a quarter of its turnover.

With continued growth, our Netherlands subsidiary, Logica BV, now has over 200 staff. The company is moving into new offices in central Rotterdam, built to our own design and allowing facilities for extra expansion. A strong standing in the banking market has been added to the company's leading position in communications and supervisory control systems. Key new contracts have been won for the government.

In Germany, Logica GmbH moved into new much expanded offices in Darmstadt, increased staff by over 50% and greatly widened the client base. Similarly in Belgium, Logica SA/NV moved into new expanded offices required by the continuing growth. And in Stockholm, Logica Svenska AB moved into new offices and completed another extremely profitable year. An operation was opened in Denmark and is already handling projects for some of the leading banks and the Danish Stock Exchange. This move is expected to lead to the establishment of a full subsidiary.

Analysis of turnover by client location



In the UK, the rate of growth at least matched that elsewhere. It was the first full year of the operation of the new trading subsidiaries. As well as concentration on their vertical market sectors within the UK, each has responsibility for certain international activities. Exports accounted for 15% of the UK-based turnover, most of these exports being in conjunction with other Logica operating companies.

The largest UK company in the group is Logica Space and Defence Systems, which grew during the year to almost 500 staff. Logica's largest ever turnkey contract was obtained for the UK Ministry of Defence. In the space sector, we are participating in all the main areas of study for Europe's proposed participation in the Columbus Space Station. The Giotto mission, in which we played an important role, was a dramatic success.

Logica Energy and Industry Systems, together with Logica BV in the Netherlands, have a world class position in providing SCADA systems, centred on our MASTER CONTROL systems kernel, for the oil, gas and water industries. During the year, work built up on the major pipeline control system for British Gas, new projects were started for a number of North Sea oil and gas field operators and our work for the water utilities grew. Important new contracts were obtained for the manufacturing industry.

Logica Communications and Electronic Systems expanded its work for computer manufacturers. This is an area of great international co-operation between Logica companies. With our spread, we are able to meet the needs of the multinational computer suppliers in most of the world's main markets. Major projects continued for British Telecom and the new automated ticketing system for London Regional Transport. We released the GALLERY 2000™ digital picture library product for the television industry, and made a first important sale to Television South (TVS) in the UK.

Logica Financial Systems had a year of exceptionally strong growth, in part associated with the requirements of the so-called Big Bang in the City of London. An outstanding success was the supply of the ON/2 system for point of sale and ATM networks to banks, retailers and credit card companies.

Logica Consultancy experienced strong demand for strategic studies for organisations reviewing their computing and communications needs. The wide base of clients covered most sectors. The Tarifica and Telematica publications, which form the prime reference documents on the European communications market, continued to be updated and extended.

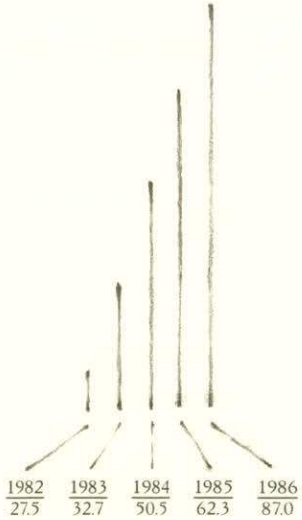
Logica Cambridge enhanced its position in research, particularly in knowledge-based systems and voice recognition. The wide range of research projects is summarised on page 30.

The future

The computer software and systems industry continues its rapid expansion around the world. We see no sign of this slackening. There is no way that the computer manufacturers can meet all their needs internally and they are increasingly turning to the software industry for assistance and co-operation. The software demands of the users are ever-growing and they too increasingly look to the software industry to help meet their needs.

Logica's ability to exploit this growth is stronger than ever before. The company has the key attributes required in the world market place. We have international coverage with companies in over a dozen countries, a high degree of specialist knowledge in the key end-user markets, very experienced staff and strong in-depth management.

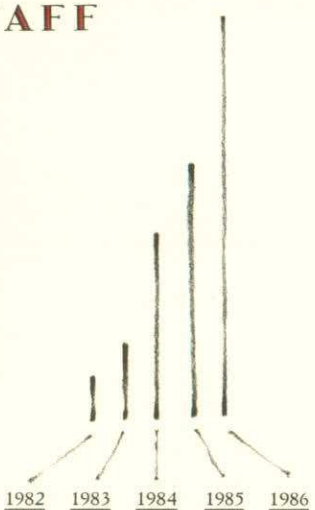
Throughout a period of change and adjustment, the directors have consistently asserted the underlying strength of Logica. The results confirm their confidence. The prospects for continuing profitable growth are excellent.



Turnover (millions)
(excluding office automation)

3rd Avenue, New York
from Logica's office

STAFF



Staff
(excluding office automation)

Worldwide, staff employed to work in Logica subsidiaries and in our joint ventures increased by 27%, from 1,843 to 2,348. Growth in wholly-owned subsidiaries was around 17%, with the additional increase resulting from the incorporation for the first time of the staff of our Italian joint venture, Logica General Systems. Particularly strong growth was recorded in the UK, the Netherlands and Germany.

For relevant comparisons, the figures given for previous years have been adjusted to exclude the number of staff working in office automation operations. The withdrawal from these operations during the year unfortunately resulted in unavoidable redundancies, primarily in manufacturing and sales activities in Swindon. Some staff were transferred to other UK activities, and almost all those made redundant have now found jobs elsewhere.

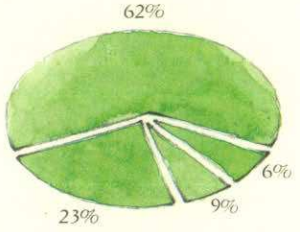
Logica's future success and growth depends critically upon the extremely high regard in which our staff are held by our clients and our industry. We continue to be highly selective in our recruitment policy and to demand very high standards at all levels of seniority. A major feature for many years has been the direct employment of graduates in a range of scientific and engineering disciplines; active graduate recruitment programmes now operate in most countries where Logica is established. During 1985/6, we had over 200 new graduate joiners and a similar number have already been recruited in 1986/7. In the UK especially, despite severely increased competition for computing and electronics specialists, we have succeeded in maintaining high standards of selection.

We provide our staff with good opportunities for a long-term career within the company. Whenever possible senior posts are filled internally, and all our staff are encouraged to develop personal career plans related to their own strengths and interests. Formal training courses are designed to complement the challenging experiences of our diverse project assignments and to provide opportunities for our experienced professionals to learn new skills and to improve their individual performance.

We employ local nationals in each country where we establish an operational base. In addition, the movement of staff between countries enables the company to make experienced managers available to develop new business opportunities. Equally importantly, it increases the range of career opportunities for our staff. Clients benefit by access to the skills and experience of Logica professionals throughout the world, regardless of their location.

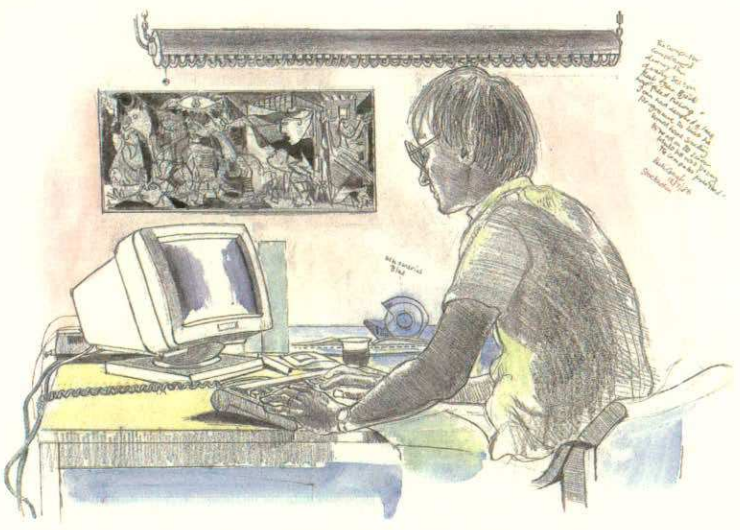
90% of our technical staff hold at least a first degree, and over 25% have additional academic qualifications including 146 doctorates. Logica's professional staff also includes a significant proportion who were recruited after substantial experience elsewhere.

Staff working for clients in consultancy, software and systems development are supported worldwide by well-qualified professional staff in personnel, marketing, communications, legal, accounting, commercial, administration and quality assurance functions. Logica applies the same high standards in the recruitment and advancement of support staff as it does to fee-earning staff.



Analysis of staff by geographic location

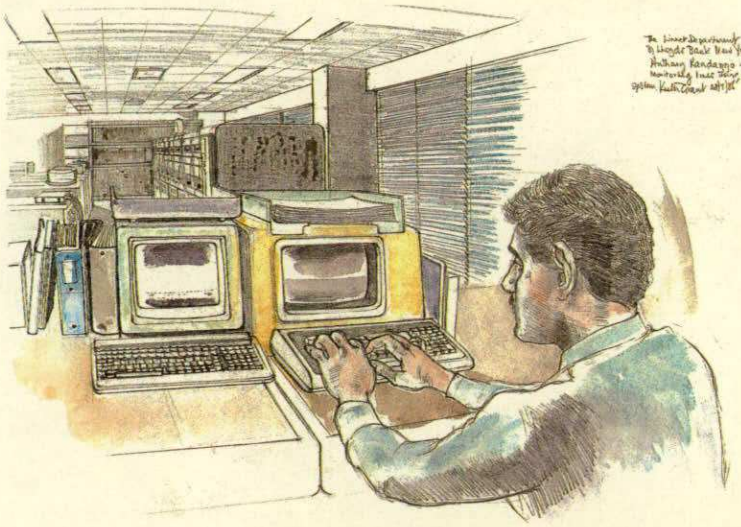
United Kingdom	62%
USA	6%
Rest of Europe	23%
Rest of World	9%

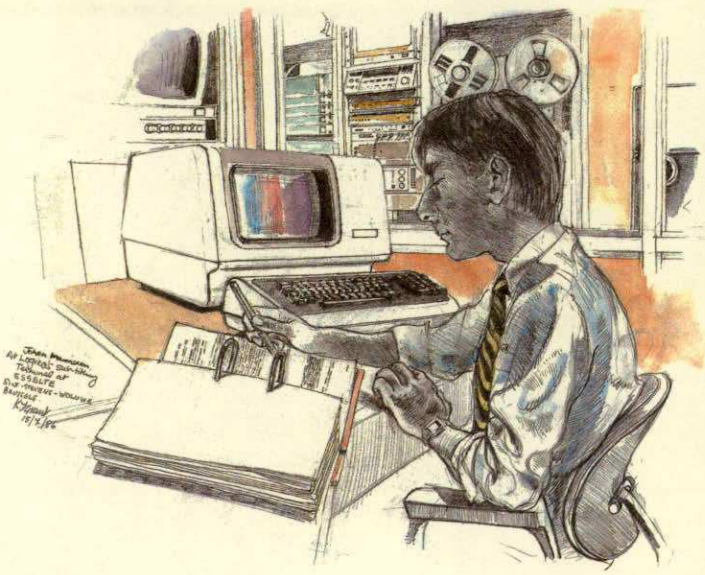


Logica's Stockholm office

Clockwise from top left

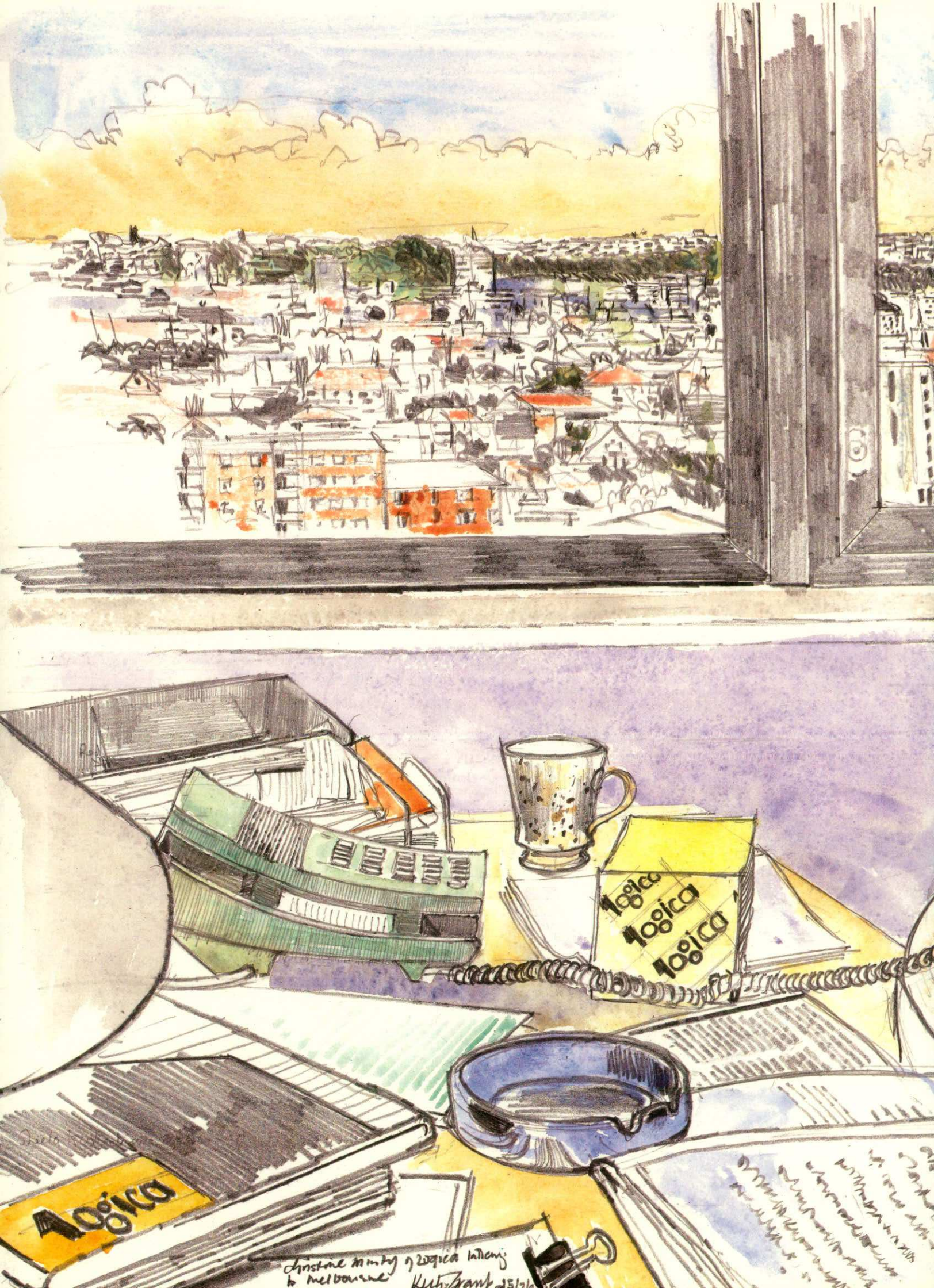
Logica staff in:
Lloyds Bank, New York
Logica's Aberdeen office
Esselte, Brussels
Bank of America, Hong Kong





Overleaf

Logica's office overlooking
Sydney harbour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FINANCE

At the beginning of the financial year, Logica announced the development of a DEC* (Digital Equipment Corporation) VAX*-based version of its FASTWIRE funds transfer and message switching product for the banking industry. This product, which will support SWIFT II when the network becomes available, has been exceptionally well received in both Europe and the US.

Installations of FASTWIRE on VAX began at the *World Bank of Washington DC, Lloyds Bank, Chemical Bank,* at several international sites, and at *Hambros Bank* in the UK. Other FASTWIRE implementations were completed at *Marine Midland Bank* and *Standard Chartered* in New York to provide payment processing and message switching functionality.

The *Sydney* and *Melbourne Stock Exchanges* in Australia jointly operate a networked information service for brokers and financial institutions called JECNET. They engaged Logica to conduct a study to assess the market for stock market information services, to review various operations and technical options for JECNET and to develop a recommended strategy for the new services.

Also in Australia, Logica operates as the installation and system support organisation for *Olivetti* for the sale of ON/2, an advanced retail banking package for the handling of automated teller machines and electronic funds transfer transactions.

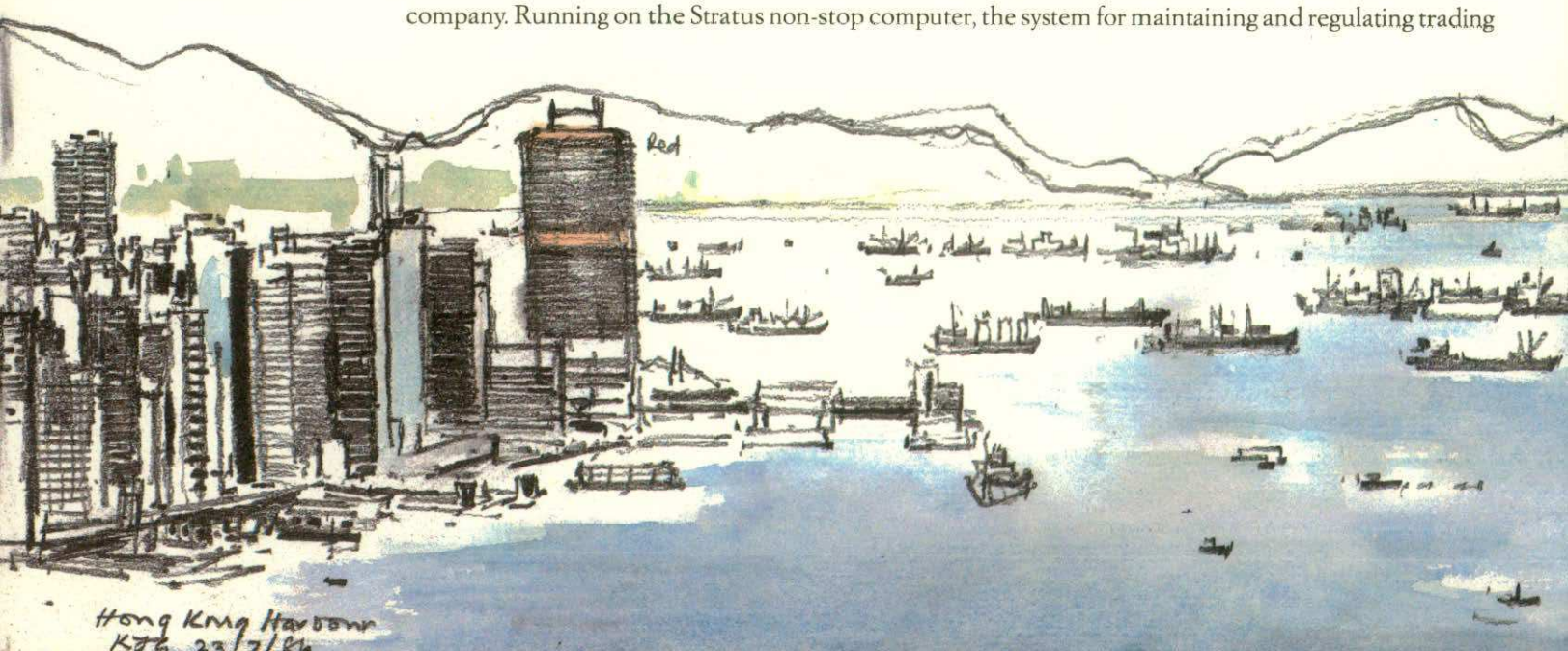
Logica implemented an automated teller machine (ATM) authorisation and control system for *Postbank NV.* The system, based on ON/2, controls a network of ATMs installed in post-offices and department stores in the Eindhoven-Tilburg region of the Netherlands.

We completed a major turnkey project for the supply of the computerised trading support system for the new unified *Stock Exchange of Hong Kong.* This 25 month project was completed one month ahead of schedule and met, or exceeded, all performance requirements. The contract included the development of high performance application software, provision of computers, terminals and machine room environment, training of brokers and other personnel who use the system, implementation support and overall project management. Logica developed unique dual-mode broker terminals which use teletext technology to ensure fast response times for stock enquiries and also operate interactively to allow brokers to enter trading details.

Still in the Far East, Logica conducted a feasibility and design study for *Bank of America's* micro-based electronic banking system, Microworld-Asia**, which provides a range of banking services in ten countries. Customers maintain their data on their own microcomputers, thus eliminating concern that data may be accessible by third parties, and have instantaneous access to information. Following the successful feasibility study, we were retained to develop the product features further and to expand the geographic scope of the service.

In advance of October 1986's 'Big Bang' deregulation in the City of London, we won a contract to develop a trading system geared to general market making for *Phillips and Drew,* a leading stockbroking company. Running on the Stratus non-stop computer, the system for maintaining and regulating trading

Hong Kong harbour from Jardine Logica's office



will give tenderers their up-to-date positions and ensure compliance with The Stock Exchange reporting requirements.

In Scandinavia, Logica conducted a strategy study on data, text and image communication between the head office and over 100 regional, district and branch offices for *Statsanstalten for Livsforsikring,* Denmark's largest life assurance company.

The major Finnish bank *Kansallis Osake Pankki* engaged Logica to analyse traffic records of transmissions between ten overseas branches and to design a network for global balance and payments as a major input to information technology strategy.

In the Netherlands, Logica was selected to implement a funds transfer message switch based on fault-tolerant hardware for *Computercentrum Bondspaarbanken.* The switch provides an interface between a number of different host computers for the interchange of financial transactions. The system will facilitate cash transactions made by account holders of the subscribing banks.

We carried out a project for *Citibank* in the UK which involved the design and development of bank-specific software to run on Tandem hardware. It will enable the bank to interface to the CHAPS network in the UK as a fully participating member of the clearing system.

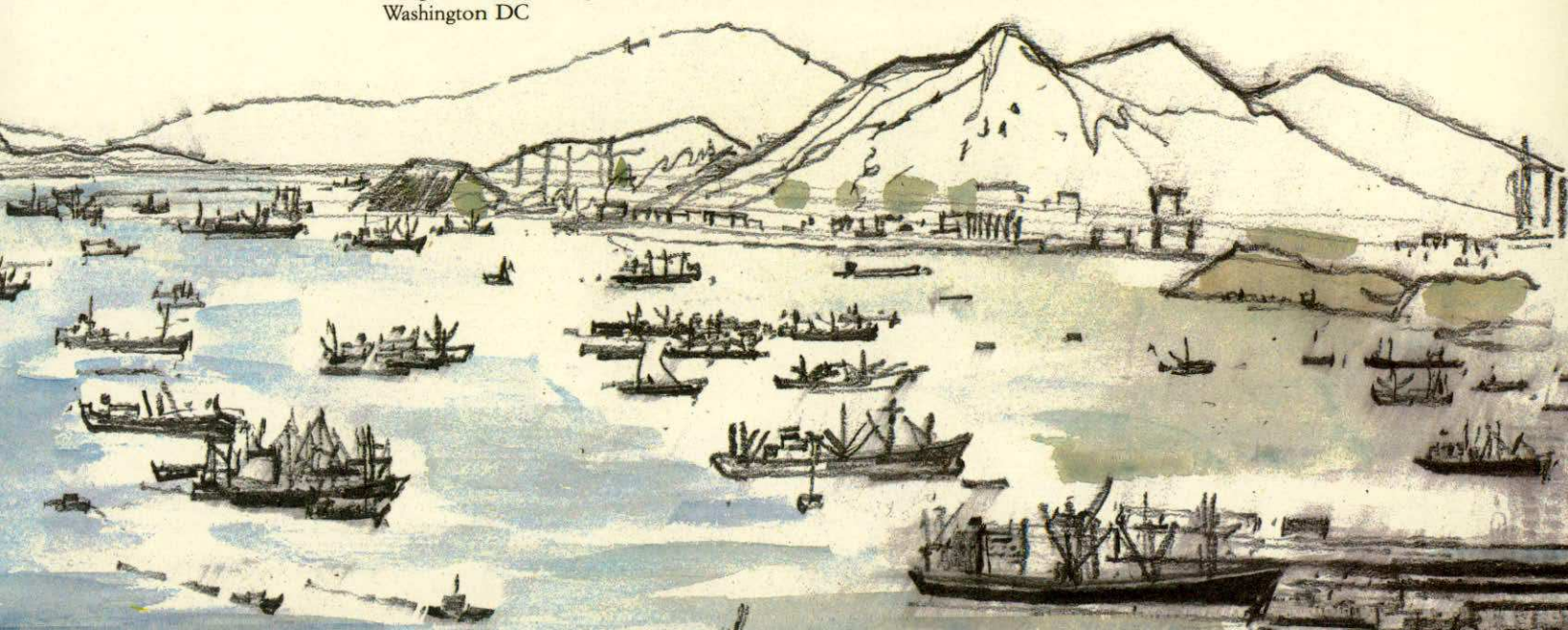
Logica was selected by *Barclays Bank* to develop a pilot backbone network for the UK. The network is designed to run on Northern Telecom packet switches using British Telecom V.32 modems which support IBM SNA comms, DEC BIAS protocols, and DECnet. Once developed, it will pave the way for a full UK data network.

BACS Limited in the UK operates an automated clearing house on behalf of the major clearing banks for the processing of corporate payments and receipts submitted direct by individual customers or computer bureaux. BACSTEL is the online version of this system based on Tandem hardware. Logica was asked to review the current system and recommend methods to improve its cost-effectiveness.

In Italy, Logica is working to link banks to the interbank network run by *SIA (Societa Interbancaria per l'Automazione)* using Honeywell equipment. We are developing the user agent interface on a Honeywell DPS88***.

For *Credito Italiano,* Logica is implementing a link between the Reuters Information Network and the bank's dealing support system. Using the Reuters RTF service, the system extracts data from the network and presents it to the dealers' terminals in a summarised and pre-analysed form.

Algemene Bank Nederland · American Express International Inc · BACS (Bankers Automated Clearing Services) · Banco Lariano · Bank of America · Bankgirot · Barclays Bank · BUPA · Cazenove · Chemical Bank · Citibank · Computercentrum Bondspaarbanken · Credito Italiano · Diners Club · eurocheque International · Great Western Savings · Hambros Bank · Hoare Govett · Istituto Bancario San Paolo Di Torino · Joint Credit Card Company · Kansallis Osake Pankki · Lloyds Bank International · Lombard North Central · London Stock Exchange · Morgan Guaranty Trust Company · Newcastle Permanent Building Society (Australia) · North Carolina National Bank Corporation · Phillips and Drew · Postbank NV · Prudential Assurance Company (Australia) · Societa Interbancaria per l'Automazione (SIA) · Society for Worldwide Interbank Financial Telecommunications (S.W.I.F.T.) · Standard Chartered Merchant Bank · Statsanstalten for Livsforsikring · Sterling Trust · Stock Exchange of Hong Kong · Swiss Bank Corporation · Sydney and Melbourne Stock Exchanges · Toro Assicurazioni · VISA Norway · World Bank of Washington DC



POST AND TELECOMMUNICATIONS

Logica, as a subcontractor to *British Telecom* Business Services, is developing part of a high-speed data network to link together various Alvey research collaborators. This network is one of the first practical implementations of the new ISDN protocols.

Logica provided analysis, design and project management for the implementation of applications software for *Australia Post's* public electronic mail system, E-POST, launched in October 1985. Logica also advised on network dimensioning and conducted the requirements analysis of network management services.

For *British Telecom Inland Communications,* Logica continued to work on the development of the Customer Services System. This is acknowledged to be one of the largest system developments taking place in the UK. The pilot site went live during spring 1986 with the main customer facing applications.

For *Televerket,* the Swedish telecommunications administration, Logica completed a major enhancement of a development system for digital PABX software. Also for *Televerket,* we conducted a major market analysis of the requirements for office automation and data processing among PABX users in Sweden.

For *Télic Alcatel,* Logica successfully completed the design and implementation of a voice mail system for its newest range of digital PABXs. The system is based on the Intel 80286, running XENIX 3.2, and provides extended facilities for user-friendly means of storage, retrieval, editing and distribution of digitised voice messages.

In March 1986, Logica published 'Digital PABXs in Australia and New Zealand – The Next Five Years'. The report describes trends in technology, products and the regulatory environment for PABXs in Australia and New Zealand. And for the European marketplace, Logica published a new report on the European communications environment entitled 'European Communication Services — Towards Integration.' The report describes the role and policies of each PTT and provides detailed reviews of service availability for all the countries in Western Europe.

Logica was asked by *CNET,* the French *Centre Nationale d'Etudes en Télécommunications,* to develop a driver to support communications between the XENIX®-based database, INFORMIX, and an RMX-based data acquisition and management system as part of the development of a large telephone call handling system.

Following a consultancy study, Logica and the *Dutch PTT* developed and implemented a file service on the IBM 3083 system to extend file transfer capabilities between IBM, VAX and Sperry systems, which are all components of the PTT's telecommunications network.

Logica assisted *Philips Radio Communication Systems* with the specification of its system for providing the Band III trunked mobile radio service.

For *Postverket,* the Swedish Post Office, Logica conducted a technical investigation of the feasibility and implications of equipping the Post Office's mobile personnel with teller terminals linked by radio to the Post Office's communications network.

Logica continues to provide support to the British *Post Office* for its counter automation programme. During the year a pilot project was defined and the *UK Department of Trade and Industry* gave official approval for it to be implemented.

The *Post Office* PIVOT (Postmasters Information on Volume of Transactions) system, which logs details of across-the-counter transactions, went live in summer 1986. Logica was responsible for database design and the design and implementation of the system.

Australia Post · British Telecom · Cable and Wireless · CNET (France) · Dutch PTT · Eutelsat · Inmarsat · Marconi Communications · Mitel · Northern Telecom · Philips Radio Communication Systems · Post Office (UK) ·Postverket · Racal Vodafone · SIP (Italy) · Telecom Australia · Televerket · TELI (Teleindustrier) · Télic Alcatel

Newman Street, London

BROADCASTING AND MEDIA

Logica has been assisting the *British Broadcasting Corporation (BBC)* to develop the software for the Domesday Project. This is being undertaken to celebrate the 900th anniversary of the original Domesday Book, which was compiled as a total inventory of his new kingdom by William the Conqueror. The software developed is for formatting the information onto the video disks prior to mastering them and for retrieving, displaying and manipulating the information from the disks on the user's system. This is a key project in the development of interactive video.

PAVANE™, an updated and enhanced version of Logica's world leading suite of teletext systems, was released during the year. New orders were received from the *BTQ7* broadcasting network in Brisbane, Australia, and by *RAI*, the Italian state broadcasting service.

Supertext-2 subtitling systems have been ordered by the *Swiss Teletext Corporation* and *ORF* in Austria. The *BBC* purchased an additional Supertext-1 system bringing its total to 17 systems.

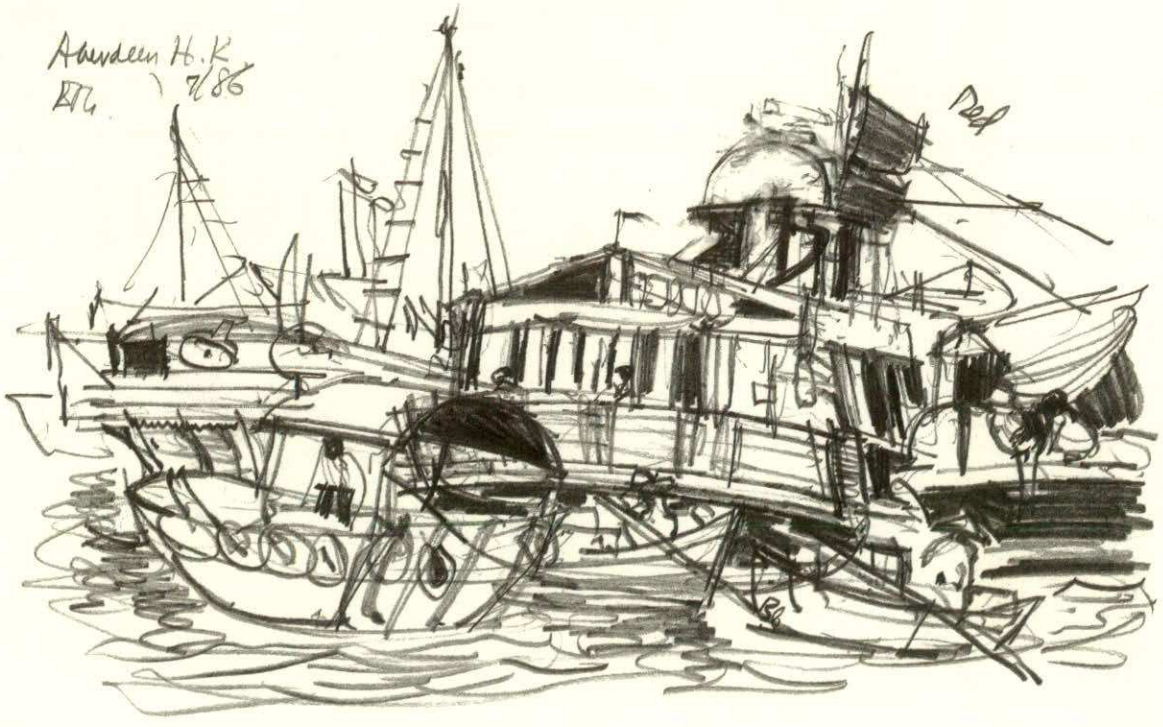
The GALLERY 2000 integrated still picture system, incorporating the latest optical disk technology, went through final product trials and was released on the market in the early summer of 1986. It has already achieved its first sale, to *Television South (TVS)* in the UK. Key features include storage on optical disk and a highly developed database offering comprehensive index information on each picture stored.

Logica carried out a series of studies over a two year period to assist *Elsevier Science Publishers* in its strategy planning for the use of advanced technology in its products and production techniques.

Logica has a contract to develop a new picture editing terminal for the *Reuters* wire photo service.

For *Lloyds of London Press Limited*, Logica began a detailed specification of its new generation of computer-based information services.

British Broadcasting Corporation (BBC) · BTQ7 · Elsevier Science Publishers · La Stampa · Lloyds of London Press Limited · ORF · RAI · Reuters · Rizzoli – Corriere Della Sera · Swiss Teletext Corporation · Thompson Publishing



Harbour scene, Hong Kong

As prime contractor, Logica developed the computerised criminal records system and associated data network for the *Greater Manchester Police* in the UK. The system was officially opened by Her Majesty the Queen and is now in operational use.

The *UK Department of National Savings* awarded Logica the contract to supply a new ERNIE system for selecting premium bond prizes. The system consists of Logica-designed random number generator hardware and a Digital Equipment minicomputer-based bond number display system.

For the *Commonwealth Department of Health* in Australia, Logica designed a counter-disaster system which provides the back-up needed by agencies activated to help with natural disasters affecting up to one million people.

The *South Australian Attorney-General* appointed Logica to assess the network requirements of the South Australian Justice Information System to serve the Police and three justice-related government agencies throughout the State.

Following the completion of our feasibility and implementation studies into government Inter-Departmental Electronic Mail (IDEM), Logica was retained as technical consultant to the *UK Central Computer and Telecommunications Agency* during the procurement and implementation of the service. The IDEM system is the first UK Government procurement in which OSI, including X.400, has been specified as a mandatory requirement.

Logica was engaged by the *Commission of the European Communities (CEC)* to examine text communication requirements between the UK Treasury and parts of the European Commission, with a view to introducing teletex as the protocol for electronic mail interchange. Logica was also asked to select an application for a pilot implementation and to specify an implementation plan for the pilot.

Logica was asked to prepare a telecommunications strategy document for the *UK Department of Health and Social Security* designed to cover technical, implementation, management and financial plans to the year 2001 for voice, data, text and image transmission.

The *Dutch Ministry of Social Affairs and Employment* commissioned Logica to develop the plan of approach for a new nationwide computer network to match vacancies with unemployed people.

The *UK Foreign and Commonwealth Office* FOLIOS office systems project reached a major milestone during the year with the signing of the full contract for the supply of the systems. We continue to supply a team providing technical and management support to the client in the implementation of its system and for checking the design and quality of the deliverables from the client's supplier.

Logica was selected to support the newly-formed *UK National Authority for Computer Security* in the development of policies and evaluation facilities for large information systems. The evaluation facilities are being set up to ensure the security of computer products and systems for handling classified material throughout government departments. This contract, awarded by the UK Government Communications Headquarters, will enable Logica to establish and maintain a centre of excellence in computer security evaluation.

Logica supplied *Rijkswaterstaat* in the Netherlands with an emergency signalling system for the Eastern Scheldt storm surge barrier. The system, which is designed for high availability, can autonomously issue commands to close the barrier gates in dangerous situations.

Australian Bicentenniel Authority · Australian Customs Office · Australian Government · Australian National Crime Authority · Australian Trade Practices Commission · Australian Wheat Board · Central Computer and Telecommunications Agency · Centrale Recherche Informatiedienst · Commission of the European Communities · Commonwealth Department of Health · Commonwealth Secretariat · Corporate Affairs Commission of New South Wales · Dutch Ministry of Justice · Dutch Ministry of Social Affairs and Employment · Greater Manchester Police · Hammersmith and Queen Charlotte's Special Health Authority · Hampshire County Council · London Borough of Bexley · Melbourne Metropolitan Board of Works · Overseas Development Administration · Queensland Department of Health · Rijkswaterstaat · South Australian Attorney-General · States of Jersey · UK Government · UK National Authority for Computer Security · Welsh Health Common Services Authority

DEFENCE

Logica is a founder member of the multinational joint-venture company *Airspace Management Systems (AMS)*, which was established to undertake the development of the NATO Air Command and Control System. Logica is leading the second phase of a contract to provide NATO with the management tools to control the procurement of this multi-million pound programme over the next 20 years.

For *Supreme Headquarters Allied Powers Europe (SHAPE)*, an extensive multinational NATO organisation comprising over 5000 staff, Logica produced a plan for introducing office automation and management information systems over the next five years.

Logica undertook studies for *NATO's SHAPE Technical Centre* on the evolution of the NATO Integrated Communications System (NICS) to a fully digital network, and on the communications and ADP facilities required for the new alternate war headquarters.

In partnership with EASAMS, a part of GEC, we undertook a design study of the tactical command and control communications system for the *Canadian Army*.

With British Telecom, Logica won a study for the development of a UK multi-service defence fixed telecommunications system.

For the *UK Royal Navy*, we have undertaken advanced research and development into processing sonar data. New software algorithms have been derived, and special electronics developed for a tracker.

For the *Royal Australian Navy Research Laboratory*, Logica assisted in specifying some of the digital signal processing software used for testing submarine sonar systems.

The *Danish Naval Material Command* has engaged Logica to provide technical support to the project manager for STANFLEX 300, a new and very versatile class of warship.

The *Royal Netherlands Navy* is preparing the development of a training system for the information-handling system for a new class of submarine. Logica was awarded the contract to provide the system definition, which gives the functional overview of the system requirements.

The *Admiralty Research Establishment* commissioned Logica to develop a facility for the manipulation of oceanographic data from direct measurements and remotely sensed satellite images.

Logica has supplied an operational weather forecasting tool to the *UK Meteorological Office* as part of the FRONTIERS research and development programme. The tool uses a national network of weather radars and satellite data to provide very short-term forecasts of rainfall.

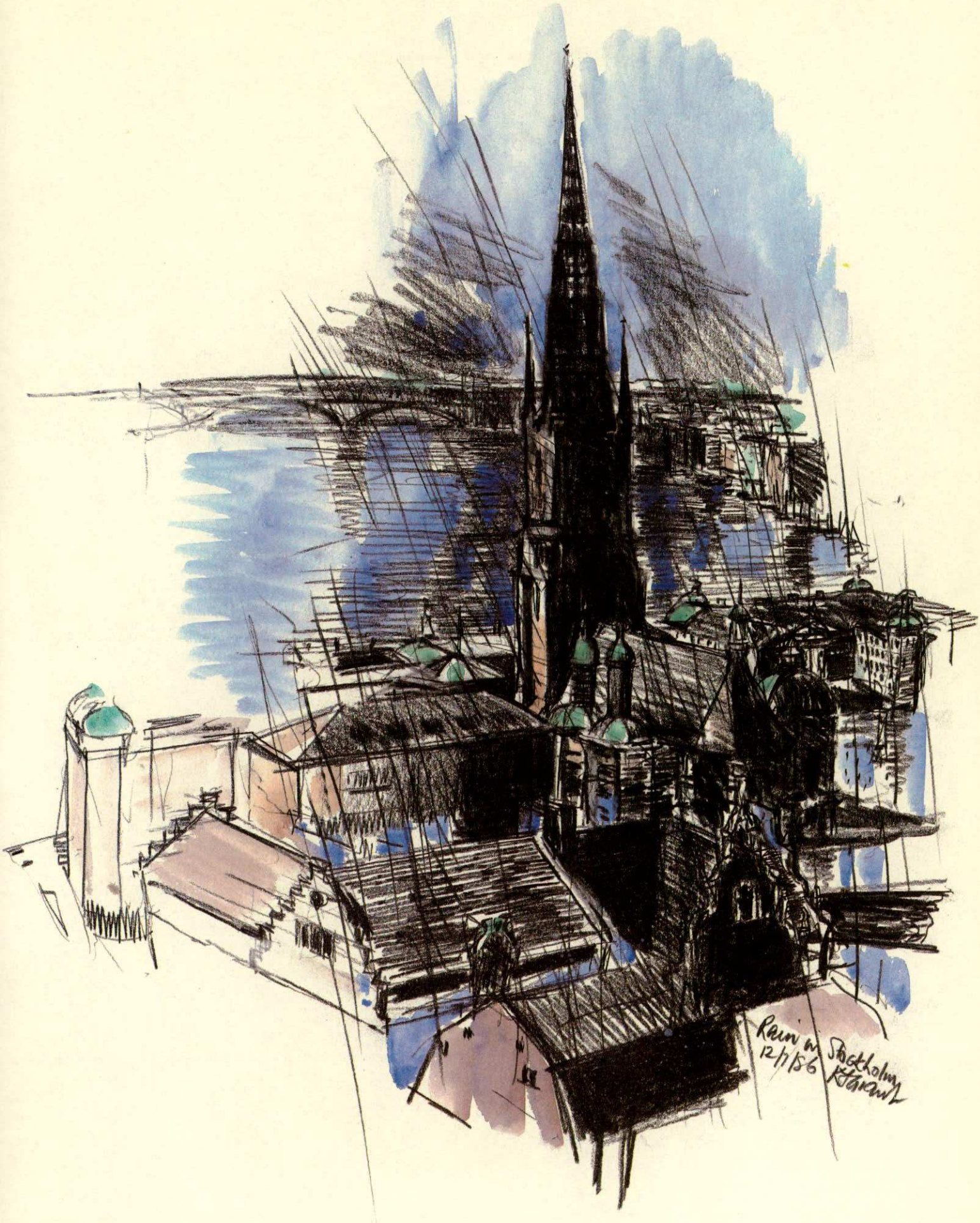
We completed the development of DIPOD, a novel computer for image processing research, in conjunction with the *Royal Signals and Radar Establishment (RSRE)*. The computer features a flexible architecture of distributed microprocessors which perform very high speed operations under the control of a specially designed language.

Logica continued to provide support to the *Royal Armament Research and Development Establishment* in the development and operational management of the Divisional War Game, which models future land operations for the British Army.

Acceptance by *British Aerospace* of a suite of software from Logica concluded a two year project to develop a new trials instrumentation system. Developed for the Rapier low level air defence programme, it offers comprehensive monitoring, control and analysis facilities.

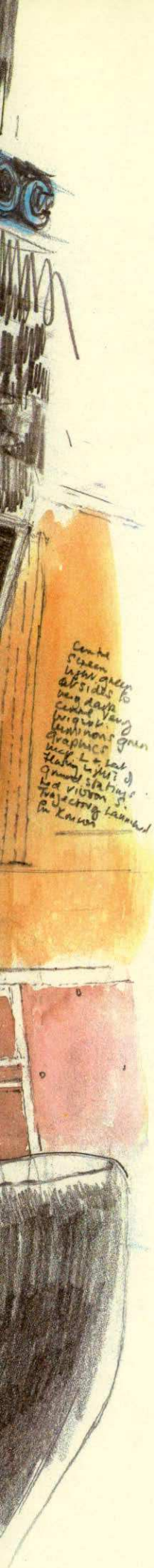
Sales of LUCID™, the software work bench for image processing, continued successfully in the defence, aerospace, industrial, energy and medical markets. In addition to sales in Europe, very promising sales were achieved in North America where it is marketed under the name VISTA-IPS™. For *Itek Optical Systems*, a division of Litton, Logica licensed VISTA-IPS for use in classified military surveillance projects. During the year, the software has been ported onto two new specialist image processing computers in collaborative ventures with *Sky* and *Masscomp*.

Airspace Management Systems (AMS) · British Aerospace · Canadian Army · Danish Naval Material Command · Ferranti · Itek Optical Systems · NATO · Office of Defence Production (Australia) · Royal Australian Navy Research Laboratories · Royal Netherlands Navy · UK Meteorological Office · UK Ministry of Defence · Westland



Stockholm

John Palmer of Logica ascertaining satellite attitude (Meteosat)



The encounter of the *European Space Agency's* Giotto satellite with Halley's Comet in March 1986 saw the culmination of several years' work by Logica. We developed the real-time control software for the Multi Satellite Support System which controlled Giotto's functioning throughout its 700 million kilometre cruise, and helped design the software to collect, pre-process and disseminate the valuable scientific data.

Working in consortia with several European companies, Logica is helping the *European Space Agency* to define the Columbus space station – Europe's contribution to the US Manned Space Station programme. For *Aeritalia* of Italy we have specified the human factor considerations and overall software management requirements for the manned laboratory element of Columbus. We are defining the data management system of the station complex and developing a ground-based test bed for *Matra* of France. For *British Aerospace*, we have defined payload operation considerations and ground test equipment requirements.

The *European Space Research and Technology Centre (ESTEC)*, in the Netherlands, contracted Logica to evaluate techniques for analysing reliability in software and integrated hardware/software systems. We are also recommending techniques for defining requirements and post-design analysis to demonstrate the reliability of systems.

ANTHRORACK is a re-usable facility for the European Spacelab, developed and integrated under a contract with ESA, and designed to support research into human physiology under micro gravity. *Kayser-Threde* in Munich, prime contractor for the definition and specification phase, retained Logica to perform specification and architectural design of the software for the ANTHRORACK facility computer. Logica undertook software specification and architectural design to support integration and testing of the ANTHRORACK facility for *Aerospatiale, the Aquitaine plant* in France, which is responsible for integration during this phase.

Logica strengthened its position further as the leading UK computer systems company in the space sector by the formation of the *CoSPACE* consortium. This was formed with the UK companies ERA Technology, General Technology Systems and Sira to undertake definition, development and operation for complete space systems. One of the first tasks undertaken by CoSPACE was an assessment of UK space technology requirements and capabilities for use by the newly formed *British National Space Centre* in its preparation of a national space plan.

To assist the *British National Space Centre*, Logica examined the economies of in-orbit resupply and servicing of the polar orbiting platform element of the Columbus space station. British Aerospace and Marconi Space Systems are subcontractors in this study in which launch vehicle options, such as the Space Shuttle, Ariane-5/Hermes and Hotol, are being evaluated.

Logica developed a computer-based system to assist satellite communications authorities to manage the international regulatory aspects of their business – an increasing burden as the geostationary orbit becomes congested. Following the supply of an initial system to *Intelsat* in Washington DC, four related systems have been delivered to major organisations including *ESTEC* in the Netherlands and the *Department of Trade and Industry* in the UK.

A new Satellite Coordination System (SATCOS) is to be implemented by Logica for the Radio Regulatory Division of the *UK Department of Trade and Industry* to manage a database of satellite networks and associated earth stations.

Aeritalia · Aerospatiale, Aquitaine Plant · British National Space Centre · British Aerospace · CoSPACE · European Space Agency · Eutelsat · Intelsat · International Telecommunications Union · Kayser-Threde · Matra · UK Department of Trade and Industry · UK Royal Aircraft Establishment

European Space Operations Centre, Darmstadt

Production platform, North Alwyn,
North Sea

Logica's MASTER CONTROL systems kernels for supervisory control and data acquisition have been particularly successful in the water and gas industries this year. Both 16 and 32 bit versions (MC 16 and MC 32) have been sold worldwide for a variety of applications.

In conjunction with Bumi Kejuruteraan in Malaysia, we were awarded a major contract by *Jabatan Bekalan Air Selangor* for the supply of a remote monitoring and control system. Based on MC 32, the system will control the distribution of water throughout the state of Selangor. The system will be the most advanced installed by a water authority in South East Asia.

Anglian Water Authority, in the UK, awarded a £1.2 million turnkey contract to Logica for the Lincoln Division Telemetry System. A MASTER CONTROL system will control water supply and distribution, sewage treatment and disposal, and monitor river drainage and tidal systems throughout the division.

The *Lee Valley Water Company* commissioned a study from Logica to design an operational management system, integrating telemetry and automation systems with administrative, commercial and maintenance systems.

Amsterdam's sewage and water management authority, *DOWA*, maintains automatic monitoring and control systems at waste-water treatment plants. Logica undertook a study of its current and future automation requirements. This study provided DOWA with an analysis of possible technical strategies and recommendations for the most appropriate strategy.

In Australia, Logica completed the design and development of a power station maintenance system for the *Electricity Commission of New South Wales.* Logica also completed a strategic information systems plan for the transmission division.

ARCO British Limited awarded Logica a SCADA/management information system contract for the Thames complex of offshore gas fields. The system will collect and process information from three gas fields for production management, reservoir management, statutory reporting and accounting.

Logica was awarded a contract for a turnkey SCADA system for *Rotterdam-Rhine Pijpleiding Mij (RRP).* The system, based on MC 32 and running on MicroVAX* computers, will monitor and control RRP's products pipeline in Holland.

BP's data acquisition systems installed at the Sullum Voe terminal in the Shetland Islands had become overloaded. Logica completed a study which defined a phased enhancement programme to provide improved systems response at minimum cost and with minimum disruption.

For *Total Oil and Marine,* Logica implemented a personnel movements system for the Alwyn North installations in the North Sea. The system enhances Logica's TRACE™ package to improve logistical planning and flight administration and to provide offshore resilience against communication failure.

In conjunction with *Gearhart Geodata Services Limited* in the UK, we have developed a database system for fossil data to assist in the analysis of rock samples for the oil and gas exploration industry.

Logica provided, on a turnkey basis, a remote command and control system to *Allseas Marine Contractors S.A.* in Switzerland for its unmanned underwater trenching vehicle. This system enables an operator in a surface vessel to dig a trench under an existing pipeline on the seabed.

Panhandle Eastern Pipe Line Company in the United States contracted Logica in Houston to provide consultancy services to help define requirements for advanced pipeline management software.

For *an oil company* in the Netherlands, Logica is developing a new interactive well-logging interpretation system. Logica is helping in the specification, design and implementation of an interactive interpretation language and a database of well-logging data which supports the language.

Ampol Petroleum Limited · Allseas Marine Contractors S.A. · Anglian Water Authority · ARCO British Limited · British Petroleum · Britoil · Central Electricity Generating Board · CSR Limited · DOWA · Electricity Commission of New South Wales · Gearhart Geodata Services Limited · Jabatan Bekalan Air Selangor · Lee Valley Water Company · NV Nederlandse Gasunie · Panhandle Eastern Pipe Line Company · Petroleum Development Oman · Rotterdam-Rhine Pijpleiding Mij · Shell Research · SIMCON · Société du Pipeline Sud-Européen · Sovereign Oil and Gas · Statoil · Total Oil and Marine · Tricentrol · Water Authority of Western Australia

MANUFACTURING

EMO is a coal, iron and ore handling terminal in Rotterdam. We are providing technical and strategic consultancy to help to determine its complete plant automation infrastructure. *EMO* uses a wide variety of PLC and computer-controlled equipment for loading and unloading ships, barges and trains with coal and iron ore.

For *Philips Elcoma* in the Netherlands, Logica investigated how to incorporate the company's surface mounting pick-and-place robots into factory-wide production networks. We proposed a strategy for integrating suitable networks with flexible manufacturing systems in a factory management and process control system. We also made recommendations for incorporating General Motors' Manufacturing Automation Protocol.

For *J C Bamford Excavators (JCB),* Logica carried out an applications and computing systems strategy review. The review identified the facilities necessary, in terms of computers, applications, communications and application development environments, to enable JCB to maintain its market edge into the next decade and beyond.

FN-Industrie, a major Belgian supplier of integrated automated systems for industrial applications, is developing a robot fault-detection system providing quality analysis of jet engine rotors. Logica was asked to specify, design and develop the control software for the robot fault-inspection system.

For *Tecnomatix,* a Belgian systems engineering and manufacturing company, Logica assisted in the design, programming, integration and testing of software for the supervisory control of an automated robot materials-handling system.

For the *Ford Motor Company,* Logica is assisting in the specification and design of new strategic engineering and manufacturing systems.

In Australia, *Colgate Palmolive* asked Logica to conduct a review of management practices and controls of certain sales arrangements. We developed a conceptual model of a system to support the sales effort.

Logica undertook a study of computer and automation systems in *BAT (UK and Export) Limited's* factories and recommended an architecture for the integration of the systems, leading to more detailed specification work at one of the plants.

Approximately 50% of the revenue from our Italian joint-venture, Logica General Systems, comes from work for the manufacturing industry. This includes commercial systems and packages for manufacturing companies, as well as systems relating directly to manufacturing itself. For example, two major projects have been undertaken in the area of production planning and control for *Tecnomasio Italiano Brown Boveri* and *Franco Tosi* based on the use of the TZAR package. Using the development facilities for applications included in the package, a tailored system has been developed for each company based on the TZAR conceptual scheme.

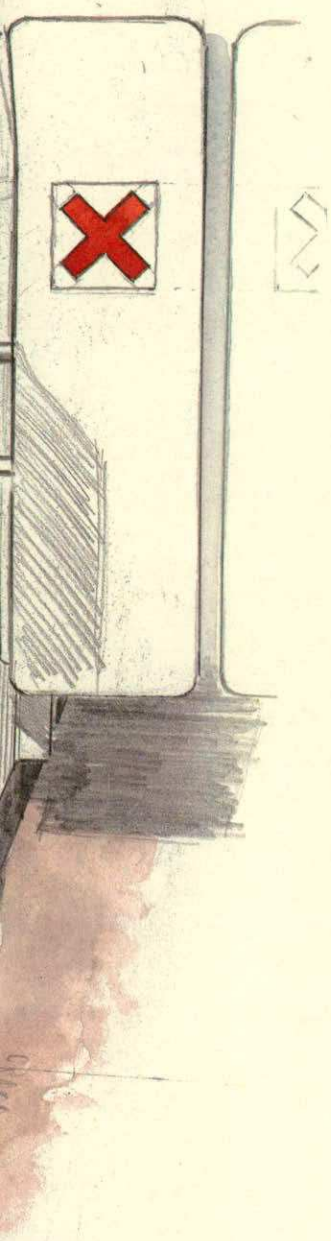
Holec in the Netherlands commissioned Logica to specify and develop the software for a fault registration and presentation system. This portable system is used by maintenance engineers for diagnosing faults in electrical installations, typically on tram and train systems.

Logica was asked by *Ingersoll Engineers* in France to help them to define and write the user requirements of a new 'just-in-time' production system for a Belgian looms manufacturer.

Agfa Gevaert · Alfa Romeo · The Angliss Group · Austral Standard Cables Pty Limited · Australia Pharmaceutical Industries Limited · J C Bamford Excavators · BAT (UK and Export) Limited · British Fermentation Products · Colgate Palmolive Pty Limited · Co.Me.Cart · Dardanio Manuli · Dunlop Olympic Tyres Limited · Eastman Kodak · EMO · Enichem Polimeri · FN-Industrie · Ford Motor Company · Franco Tosi · Gilardini · Gist Brocades · Grosby Footwear · Gruppo Fiat · Heathway Limited · Holec · Ingersoll Engineers · Interconnection Systems Limited · Kongsberg Vaapenfabrikk · Mannesmann Demag Pty Limited · NEC · Nestlé Australia Limited · Philips Elcoma · Royal Australian Mint · Shell · Sobemi NV · Tecnomasio Italiana Brown Boveri · Tecnomatix · Telettra · Unilever Australia Limited · Volvo Parts · WABCO Westinghouse · Woolworths Limited

Electricity generating station, New South Wales

Automatic passenger gate for the new London underground ticketing system



For the *Bremer Lagerhaus-Gesellschaft (BLG),* the operating company for the ports of Bremen and Bremerhaven, Logica companies in West Germany and the UK collaborated to analyse the requirements for a future control system to supervise container movements in the Wilhelm Kaisen container terminal in Bremerhaven. Subsequently, a joint Logica/BLG team carried out both the system concept design and system sizing. Work has now commenced on the detailed design for the operational system.

The role of *INTIS, International Transport Information System,* is to provide information services at the Port of Rotterdam. Logica has undertaken several projects for INTIS, including developing a prototype for a transport control system, defining standards for electronic data interchange and local communication facilities, and, in collaboration with the Dutch PTT, defining the required transport and network services.

Logica was awarded the contract to supply to *Westinghouse Cubic Limited* the central control software for the new London Underground ticketing system and the special terminal hardware to be installed in all Underground stations around the London area.

The maintenance scheduling system developed for the *London Underground* by Logica went into acceptance in the spring of 1986.

Logica completed the development of a personnel system for the *Department of Main Roads,* New South Wales, Australia, which employs over 9,000 staff. Work has started on the design and implementation of an integrated payroll system.

Logica designed a packet-switched network to meet the communications requirements of the *State Rail Authority of New South Wales.* The design was incorporated in the tender specifications and Logica subsequently assisted with the evaluation of the tenders.

Logica was retained by *Business Travel Systems,* a subsidiary of Scandinavian Airlines, to design and implement a fault-tolerant gateway to the Scandinavian Multi-Access System for Travel Agents (SMART). The gateway will provide access to, and ticketing facilities for, a number of systems for the business traveller, including foreign airlines, hotels and car rental firms.

As part of an information system for *Aeritalia* in Italy, we are implementing a sophisticated system which integrates general accounting, handled by the GL package, and departmental accounting for clients, suppliers and banks. The complex project involves phased installation at two sites in Naples and Turin, while maintaining the ability to exchange information, and uses the M:SDT fourth generation language.

Logica has recently completed an important study into the potential applications of intelligent knowledge-based systems in air traffic control. The *UK Civil Aviation Authority* commissioned the study because new and sophisticated computer aids will be needed to help controllers deal with the increased numbers of aircraft expected to be flying through UK airspace in the 1990s.

Aeritalia · Air India · Bremer Lagerhaus-Gesellschaft · BTS/SAS · Civil Aviation Authority · Department of Main Roads of New South Wales · EVHA Europese Vereniging voor Haveninformatica · GEC General Signal · INTIS BV · Lloyds Shipping Information Services · London Underground Railways Limited · Road Traffic Authority of Victoria · San Franscisco Bay Area Rapid Transit · SMART (Sweden) · State Rail Authority of New South Wales · Travel Industry Automated Systems Pty Limited · UK Department of Transport · Viking Line · Westinghouse Cubic Limited

For *Deutsche Olivetti GmbH*, Logica developed two point-of-sale (POS) software products for the company's clients in Germany. Logica helped Olivetti to analyse the clients' requirements and was subsequently awarded a contract to produce the software which has now been successfully installed. The POS systems perform detailed sales analyses, stock control functions and financial reporting in a stand-alone or multi-terminal environment. The POS terminals also operate at night in an unattended automatic mode to exchange data with the retailer's computer centres.

Amongst our wide range of activities for *Olivetti* in Italy, we are involved in UNIX[□□] System V. The projects concerned include: porting System V.21 libraries and utilities from the AT&T 3B2 to Olivetti's new line of computers, optimising C-ISAM for different System V environments and designing a test suite for UNIX System V interface definition. In addition to these activities there is a significant involvement in office automation development on the Olivetti M24 PC.

For *Siemens Belgium*, Logica provided technical assistance and took project management responsibilities for developing several applications in the field of public works, emergency services and hospital management using INFORMIX and SINIX, Siemens' enhanced version of UNIX.

For *a large computer manufacturer* in the Netherlands, we are providing software support for the development of a system which is replacing bus and tram tickets with magnetic cards.

First deliveries of the *Norsk Data* UNIX system, provided under a software development contract by Logica, were made to CERN, the nuclear research centre in Switzerland.

Inter Innovation Bank Systems developed a new generation of automatic teller machines and commissioned Logica in Sweden to produce a requirement specification for a major Scandinavian bank. Logica was subsequently awarded the contract to develop the customer specific software on the ATM for this client.

We are providing management support to *Sperry* in the implementation of extensive office automation systems by the Trustee Savings Bank in Scotland.

Logica continues to assist *Philips Telesoft International* in Belgium with the development of Sophonet, Philips wide area network. Still in Belgium, we provided assistance to the Engineering Department of *GTE ATEA* to develop a telephone terminal which has a built-in card reader and a microcomputer to handle electronic funds transfer and credit card authorisation transactions.

Development support work continues for *IBM United Kingdom Laboratories Limited* on the major graphics software product development which was completed during the year.

We have been assisting *Wang* to develop communications interfaces to other hardware suppliers' equipment.

Logica has joined forces with *NCR* in Australia to install and support computer-assisted dispatch systems for emergency services, taxis and couriers.

Logica has been working with *Cambridge Instruments* to develop software for semi-conductor design.

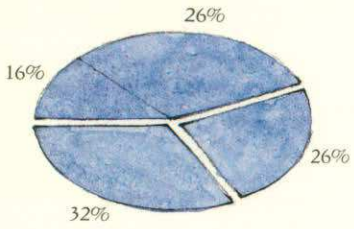
Reuters provides financial information services across the world. Logica manufactured high quality electronics equipment to be installed by the company worldwide.

The 1986 edition of Logica's Telematica service, a multi-client study of telecommunications markets, was delivered to subscribers who include the leading suppliers of information technology products and services in Western Europe. The study provides forecasts for networking and communications equipment accompanied by an analysis of trends and developments in communications markets.

Acorn Computers · Beckmann Industrial · Cambridge Instruments · Dataport Microsystems · Deutsche Olivetti GmbH · Digital Microsystems · Domino Printing Sciences · Ericsson Information Systems · Fiat · Fuji Corporation Limited · GTE ATEA · Honeywell Information Systems Italia · IBM Australia Limited · IBM United Kingdom Laboratories Limited · Inter Innovation Bank Systems (Sweden) · Mitel South Pacific · NCR Australia · NEC Information Systems Australia Pty Limited · Norsk Data · Olivetti · Philips Communications · Philips Telesoft International · Rank Xerox · Reuters · Siemens · Sperry · Toshiba (Australia) Pty Limited · Wang

Logica's office in Brussels

RESEARCH AND DEVELOPMENT



Funded by clients	32%
Funded by research and development programmes	26%
Funded by Logica:	
– product development	26%
– other research and development	16%

Logica carries out three types of research and development work: contract development funded by clients, internally funded research and development and part-sponsored collaborative projects.

Many of the contract research and development projects for clients are referred to in the earlier sections of this review. Also described in the previous pages are some of Logica's own research and development activities. Logica Cambridge Limited is the focal point for much of this work.

The majority of the research undertaken during the year was done as a part of the Alvey and ESPRIT programmes sponsored by the UK government and the European Commission respectively. In the UK, Logica is participating in more Alvey and ESPRIT projects than any other software company.

Logica is leading a team of seven collaborators – three academic and four industrial – in producing a parallel simulation facility, code named Parsifal. This Alvey-supported project aims to produce a powerful transputer-based computer, and to use its switchable interconnection system to investigate the effects of different topologies on various problem solving algorithms.

In the Linguistic Analysis of English project, Logica is assisting *Acorn Computers Limited* with the linguistic component for speech synthesis from text. This forms part of Acorn's contribution, as the English language collaborators, to the ESPRIT project Linguistic Analysis of the European Languages. The ESPRIT project covers the Dutch, English, French, German, Greek, Italian and Spanish languages. One of its strengths is the emphasis on common analysis strategies and the use of shared software tools and databases.

Another project for the Alvey Directorate is concerned with the development and evaluation of an Intelligent Computer Aided Instruction (ICAI) system and a knowledge base for teaching the operation, maintenance and programming of a computer numerically controlled machine tool. Collaborators in the project include British industry and academic institutions. In addition to our role as coordinator of the whole project, Logica is developing hardware and ICAI software based on its TUTOR intelligent training prototype.

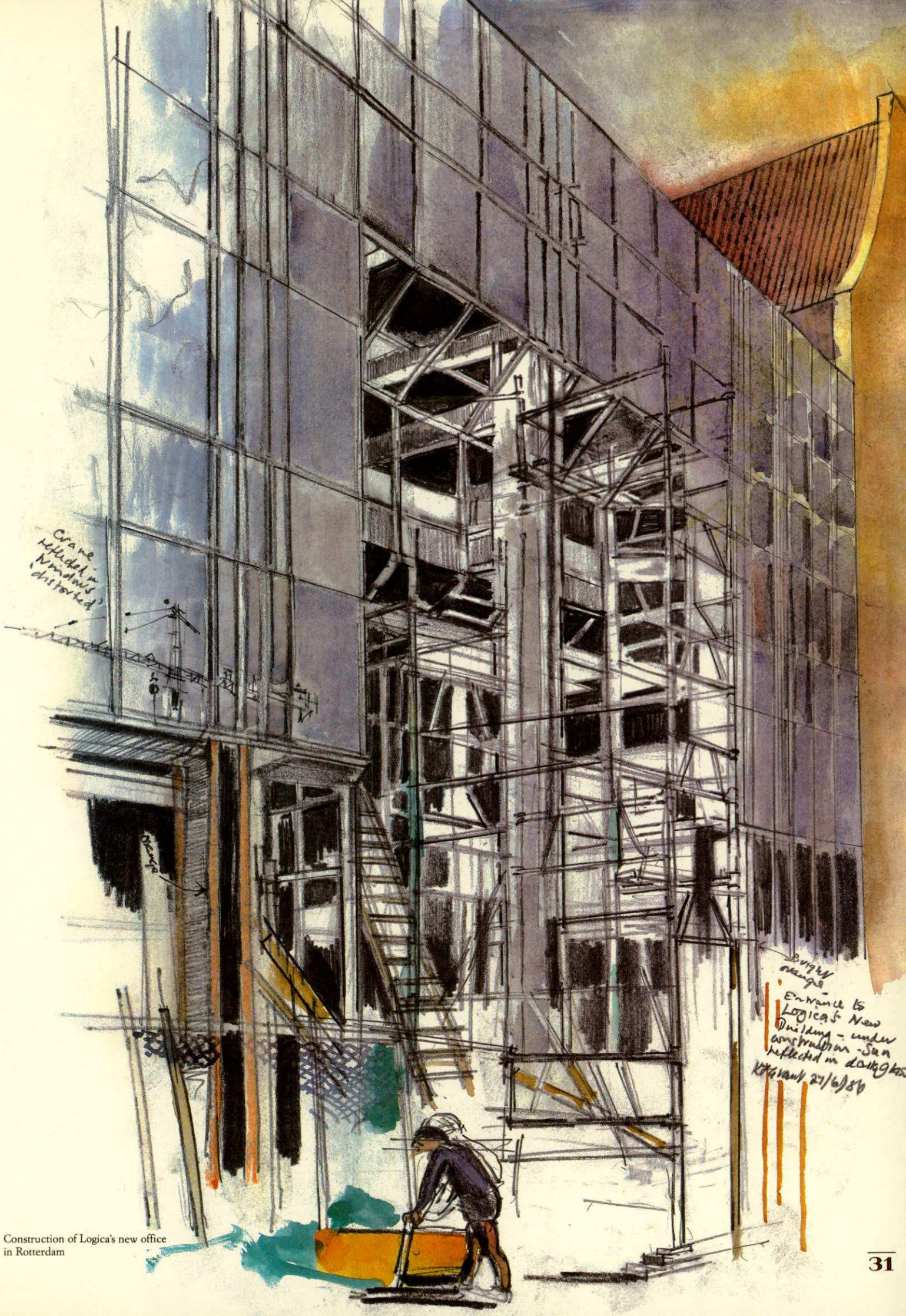
ARIES is a project jointly sponsored by the Alvey Directorate and a 'club' of UK insurance companies with the objective of assessing the use of expert systems within their industry. Logica is developing expert systems to cover commercial risk assessment and equity selection.

Logica is working with *Shell Research Limited* and *FBC Limited* on a knowledge-based system demonstrator under the UK government's Alvey programme. The project is building two knowledge-based systems: for lubricating oil formulation and for agricultural chemical formulation. The objective is to develop a generic set of building blocks for future formulation decision aids.

Under *EEC* sponsorship, we are collaborating in an ESPRIT project being carried out to explore Computer Integrated Manufacturing (CIM) architectures. This is with a view to producing a CIM system for *Fabrique National* at Herstal in Belgium, to automate a machining process in small arms manufacture.

LOGOS™, the real-time continuous speech recognition system developed by Logica, has undergone further development and has formed the basis for advanced research programmes for the UK government and the financial sector.

PROJECT SESAME, our internal Software Engineering programme, completed its third successful year of operation. Because a large part of our business is concerned with producing software, it is essential that the methods and tools which we use are geared to the development of high quality software and high productivity. SESAME was initiated in 1983 to ensure that we continue to take optimum advantage of the rapid improvements which are now occuring in software technology. Sesame's activities include: advising Logica staff on software tools and methods, training courses in software engineering, quality standards, and developing software tools such as MacCadd. MacCadd is an integrated set of tools for software requirements analysis and design on the Apple† Macintosh††.



Construction of Logica's new office in Rotterdam

OFFICE ADDRESSES AROUND THE WORLD

Logica plc

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Logica Energy and Industry Systems Limited
Logica Financial Systems Limited
Logica Software Products Limited
Logica Space and Defence Systems Limited

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Directors

P A B Hughes *(Chairman)*
L A Taylor *(Managing Director)*
A L Karney
I Macleod
D W Mann *(Deputy Managing Director)*
B V Martin
G G Moore
C G Rowland
D J Stanley
P G Bosonnet *(non-executive)*
C J F Böttcher *(non-executive)*

Secretary

G G Moore

Registered office

64 Newman Street
London W1A 4SE

Registrars

Close Registrars Limited
Arthur House
803 High Road
Leyton
London E10 7AA

REPORT OF THE DIRECTORS

The Directors present their report together with the accounts of the Company and its subsidiaries for the year ended 30 June 1986. These will be laid before the shareholders at the Annual General Meeting to be held on 10 November 1986.

Principal activities

The business undertaken by Logica companies throughout the year included:
- the marketing, design, production and maintenance of custom built software and associated hardware systems
- consultancy and project management in the field of information technology
- the design, development, implementation and marketing of software products and the re-usable elements of applications software, called systems kernels.

Logica withdrew from its office automation business during the year.

Results and dividends

The year was marked by a major change – the withdrawal from operations in office automation. In the early part of the year the importance of these events tended to overshadow the extremely strong performance of the continuing business. The report shows just how well Logica came through this difficult phase with sharply increased turnover and operating profits.

Turnover was £87.0 million compared with £62.3 million in the previous year, a growth of 40%. Operating profit was £7.5 million compared with £4.5 million in the previous year, a growth of 65%. Profit after interest and before taxation was £6.8 million compared with £5.0 million in the previous year, a growth of 36%. After a tax charge of 38%, profit after taxation was £4.2 million compared with £2.3 million in the previous year, a growth of 84%. For ease of comparison, last year's figures exclude office automation from the results.

The losses incurred on withdrawal from office automation have been treated as extraordinary charges as advised in the circular to shareholders in December 1985. The total of extraordinary charges was £12.2 million, £3.7 million less than provided for in the circular.

The Company's improved financial situation is reflected in the balance sheet. Net borrowings of £11.9 million at the beginning of the year have been turned into net cash balances of £8.3 million at June 1986. This was the result of the new capital of £15.1 million raised in January, a positive cash flow generated from operations and a net cash surplus resulting from the withdrawal from office automation activities.

The directors propose a final dividend of 1.00p per share (net).

Restructuring of capital

As set out in the circular to shareholders dated 18 December 1985, the Company increased its authorised share capital to £5,200,000 by the creation of 14,500,000 new ordinary shares of 10p each. The new shares were allotted on 20 January 1986 pursuant to the refinancing arrangements.

Business review

A review of the development of the business during the year is given on pages 3 to 30. Included in the review are references to research and development activities and the Company's future prospects.

Directors

During the year there were the following changes in the composition of the board:

A L Karney, I Macleod, B V Martin, G G Moore and D J Stanley were appointed to the board on 1 May 1986.

P G Bosonnet, who is the Deputy Chairman of The BOC Group plc, was appointed to the board as a non-executive director on 31 January 1986.

P J Coen resigned from the board on 11 December 1985 in order to take an extended period of leave. R G Varley and G N Olson resigned from the board on 30 June 1986. Subsequent to the year end, D J Stanley resigned on 15 August 1986.

The interests of the directors in the shares of the company are shown below. On 17 July 1986, G G Moore acquired beneficially 10,000 ordinary shares of the company; there were no other changes in the period 1 July 1986 to 24 September 1986.

	30 June 1986			30 June 1985 or date of appointment		
	Beneficial	Non-Beneficial	Options	Beneficial	Non-Beneficial	Options
P A B Hughes	2,771,287	215,088	0	2,371,287	190,088	0
L A Taylor	2,043,296	230,001	4,966	1,643,296	200,001	2,027
A L Karney	53,696	0	29,966	53,696	0	29,966
I Macleod	22,345	0	25,000	22,345	0	25,000
D W Mann	500,000	93,912	39,966	423,192	71,938	2,027
B V Martin	47,850	0	25,000	47,850	0	25,000
G G Moore	0	0	25,000	0	0	25,000
C G Rowland	112,560	93,912	34,966	92,560	75,130	0
D J Stanley	20,254	0	27,483	20,254	0	27,483
C J F Böttcher	50,793	0	0	40,635	0	0
P G Bosonnet	0	0	0	0	0	0
Employee Shareholder Trusts	0	128,921	0	0	1,714	0

The Employee Shareholder Trusts' shares are held by P A B Hughes, L A Taylor and D W Mann acting as trustees.

None of the Directors had a material interest in any contract of significance to which the parent Company or a subsidiary was a party during the financial year.

Substantial holdings

The directors' interests are described above. In addition the directors have been notified that Scottish Amicable Investment Managers Limited hold 6.55% of the issued share capital.

Disabled persons

It is the Company's policy to give full and careful consideration to applications for employment from disabled persons, to continue wherever possible the employment of members of staff who become disabled, and to ensure that training and career development are encouraged.

Employee participation

It is Company policy regularly to hold meetings with staff when matters concerning them and their area of business are discussed. All staff receive the annual report and accounts.

Approximately 22% of the company's shares are held by the staff.

Fixed assets

The changes in the fixed assets of the Company and its subsidiaries are disclosed in Notes 11 and 12 to the accounts.

Taxation

The Company is not a close company within the provisions of the Income and Corporation Taxes Act 1970.

Auditors

Price Waterhouse have expressed their willingness to continue in office. A resolution will be proposed at the Annual General Meeting for their re-appointment as auditors and authorising the directors to fix their remuneration.

Authority to allot securities

Under Section 89 of the Companies Act 1985 equity securities in the Company may not be allotted for cash (otherwise than in respect of an employee share scheme) without first being offered pro rata to existing shareholders, unless the prior approval of the shareholders in General Meeting is given. The Directors consider that it is in the best interests of the Company that the relevant authority given at the Annual General Meeting in 1985 should be renewed in similar terms. Accordingly a Special Resolution to this effect is proposed as Resolution No. 4 in the Notice of the forthcoming Annual General Meeting. The proposed authority expires at the date of the 1987 Annual General Meeting and permits the Directors during this period to issue equity securities up to 5% of the authorised share capital without first offering them to existing shareholders.

By order of the Board

G G Moore
Secretary

24 September 1986

CONSOLIDATED PROFIT AND LOSS ACCOUNT

for Year Ended 30 June 1986

	Note	1986 £'000	1985 £'000
Turnover	1	**87,042**	**62,284**
less adjustment to exclude turnover of related companies		7,379	2,154
Consolidated turnover		79,663	60,130
Operating profit	2	**7,457**	**4,529**
Interest receivable/(payable)	4	(649)	487
Profit on ordinary activities before taxation		**6,808**	**5,016**
Taxation on ordinary activities	5	2,574	2,717
Profit on ordinary activities after taxation		**4,234**	**2,299**
Loss on discontinued activities after taxation	6		(4,558)
Profit/(loss) on all activities after taxation		**4,234**	**(2,259)**
Minority interest			51
Extraordinary charges	7	(12,175)	(1,313)
Loss after taxation and extraordinary charges		(7,941)	(3,521)
Dividends paid and proposed	8	495	122
Transfer from reserves		(8,436)	(3,643)
Earnings per share on ordinary activities	10	10.07p	6.95p
Dividends per share		1.00p	0.35p

CONSOLIDATED BALANCE SHEET

at 30 June 1986

	Note		1986 £'000		1985 £'000
Fixed assets					
Intangible assets	11	0		3,420	
Tangible assets	12	7,443		6,982	
Investments	13	895		668	
			8,338		11,070
Current assets					
Stocks	15	5,861		5,287	
Debtors	16	19,457		16,119	
Cash and bank balances		8,628		1,857	
		33,946		23,263	
Creditors due within one year					
Bank loans and overdrafts		(308)		(13,734)	
Other	17	(17,763)		(15,428)	
		(18,071)		(29,162)	
Net current assets			**15,875**		**(5,899)**
Total assets less current liabilities			**24,213**		**5,171**
Creditors due after more than one year	18	(1,477)		(1,014)	
Deferred taxation	19	(178)		(983)	
			(1,655)		(1,997)
Net assets of ordinary activities			**22,558**		**3,174**
Net assets of discontinued activities	20		273		15,620
			22,831		18,794
Capital and reserves					
Called-up share capital	22		4,950		3,500
Share premium account	23		8,905		12,599
Other reserves	23		2,117		2,088
Profit and loss account	23		6,859		607
			22,831		18,794

P A B Hughes
L A Taylor

Directors
24 September 1986

CONSOLIDATED SOURCE AND APPLICATION OF FUNDS

for Year Ended 30 June 1986

		1986		1985
		£'000		£'000
Profit on ordinary activities before taxation		6,808		5,016
Extraordinary charges before taxation, other than discontinued activities charged below		(1,983)		(555)
Adjustments for items not involving the movement of funds				
Depreciation and amortisation	1,728		1,250	
Profit on sale of fixed assets	(3)		(24)	
Translation differences	756		(166)	
Share of related companies' profit	(357)		(88)	
		2,124		972
Funds generated by operations		6,949		5,433
Funds from other sources				
Taxation refunded	153		288	
Sale of fixed assets	186		229	
		339		517
		7,288		5,950
Application of funds				
Purchase of fixed assets	(2,385)		(3,949)	
Taxation paid	(1,355)		(1,929)	
Payment of group tax relief	(2,070)			
Acquisition of related company and trade investments	0		(647)	
Acquisition of minority interests	(8)		(223)	
Dividends paid	0		(350)	
		(5,818)		(7,098)
		1,470		(1,148)
(Increase)/decrease in working capital				
Stocks	(574)		(218)	
Debtors	(3,092)		(2,210)	
Creditors	2,741		3,883	
		(925)		1,455
Increase in net liquid funds from ordinary activities		**545**		**307**
Loss on discontinued activities before taxation			(7,351)	
Extraordinary charges before taxation relating to discontinued activities	(12,929)		(1,040)	
Receipt of group tax relief	2,070			
Reduction/(increase) in net assets of discontinued activities	15,411		(2,935)	
		4,552		(11,326)
		5,097		(11,019)
Issue of new shares		**15,100**		
Increase/(reduction) in net liquid funds		**20,197**		**(11,019)**

COMPANY BALANCE SHEET

at 30 June 1986

	Note		1986 £'000		1985 £'000
Fixed assets – Investments	13		14,574		23,848
Current assets					
Debtors	16	2,772		2,505	
Cash and bank balances		716		10	
		3,488		2,515	
Creditors due within one year					
Bank loans and overdrafts		0		(8,307)	
Other	17	(2,206)		(1,517)	
		(2,206)		(9,824)	
Net current assets			1,282		(7,309)
Total assets less current liabilities			15,856		16,539
Creditors due after more than one year			1,000		0
			14,856		16,539
Capital and reserves					
Called-up share capital	22		4,950		3,500
Share premium account	23		8,905		12,599
Profit and loss account	23		1,001		440
			14,856		16,539

P A B Hughes
L A Taylor

Directors
24 September 1986

NOTES TO THE ACCOUNTS

		1986 £'000	1985 £'000
1 Turnover	Turnover is analysed geographically as follows:		
	United Kingdom	47,639	32,746
	Rest of Europe	22,720	13,855
	USA	8,733	9,362
	Asia and Australia	7,950	6,321
		87,042	**62,284**
	Less adjustment to exclude turnover of related companies	7,379	2,154
	Consolidated turnover	**79,663**	**60,130**
2 Operating profit	Group turnover	79,663	60,130
	Change in stocks of finished goods and work in progress	610	1,633
	Revenue	80,273	61,763
	Raw materials and consumables	923	1,464
	Other external charges	15,724	10,854
	Staff costs (see note 3)	40,209	32,159
	Depreciation and other amounts written off tangible and intangible assets	1,728	1,250
	Auditors' remuneration and expenses	130	168
	Hire of plant and machinery	73	18
	Operating lease rentals	4,059	3,289
	Other operating charges	10,327	8,120
		73,173	57,322
		7,100	4,441
	Share of profit of related companies	357	88
	Operating profit	**7,457**	**4,529**

3 Staff

3.1 Staff numbers

The number of people employed by the group and its related companies at 30 June were geographically located as follows:

	Number	Number
United Kingdom	1,464	1,237
Rest of Europe	533	278
USA	148	177
Asia and Australia	203	151
Total including related companies	**2,348**	**1,843**
Less employed in related companies	218	21
Total excluding related companies	2,130	1,822

The average number of people employed in the UK during the year was 1,402 (1985 – 1,197).

3.2 Staff costs	1986 £'000	1985 £'000
Wages and salaries	35,805	29,116
Social security costs	3,444	2,443
Other pension costs	960	600
	40,209	**32,159**

There are voluntary pension schemes in the UK, Netherlands and Australia funded by fixed percentage and voluntary contributions. There are no unfunded liabilities in these schemes.

3.3 Directors

Directors' emoluments including employer's pension contributions and benefits in kind	460,255	478,771
Included in the above are the emoluments of:		
the chairman	71,489	56,106
the highest paid director	83,113	67,590

Additionally, ex gratia payments to former executive directors were made subsequent to the year end totalling £92,000 for which provision has been made in these accounts.

The table shows the number of directors, other than the chairman and the highest paid director, and higher paid employees in the United Kingdom whose remuneration excluding pension contributions were within the bands stated.

	Directors		Higher paid employees	
	1986	1985	1986	1985
£ 0-£ 5,000	2	1		
£ 5,001-£10,000	5	0		
£20,001-£25,000	1	0		
£25,001-£30,000	0	1		
£30,001-£35,000	0	2	8	1
£35,001-£40,000	0	1	11	1
£40,001-£45,000	1	2	1	0
£45,001-£50,000	0	1	1	0
£50,001-£55,000	2	1	0	0
£65,001-£70,000	1	0	0	0

4 Interest

	1986 £'000	1985 £'000
Receivable	418	112
Payable	(1,067)	(1,384)
	(649)	(1,272)
Less: allocated to discontinued activities		1,759
	(649)	**487**

The allocation to discontinued activities in 1985 represents external interest paid by office automation subsidiaries and interest charged by group holding companies on outstanding loans. In 1986 all interest has been charged to ordinary activities.

5 Taxation

	1986 £'000	1985 £'000
Charge to UK Corporation Tax 38.75% (1985 – 43.75%)	2,066	2,462
Overseas taxation	28	61
Foreign tax in respect of overseas subsidiaries	684	563
Relief for overseas taxation	(28)	(61)
Deferred taxation	47	(319)
	2,797	2,706
Overprovision in respect of prior years	(355)	0
Related companies	132	11
	2,574	**2,717**

There are unutilised tax losses in the group amounting to approximately £2.2 million which may be available for the relief of the profits of certain subsidiaries in future years.

6 Loss on discontinued activities after taxation

Losses incurred in the year on withdrawal from office automation have been treated as extraordinary charges. The loss on these activities in 1984/5 comprised:

	£'000
Operating loss	5,592
Interest	1,759
Loss before taxation	7,351
Taxation	2,793
Loss after taxation	**4,558**

7 Extraordinary charges

Costs of closure of the office automation businesses in the UK and USA	12,929	1,040
Provision for costs of surplus office space in USA	583	555
Contingency provision made at the time of the refinancing in December 1985 in respect of fixed price contracts	1,000	0
Professional and other fees in connection with the capital restructuring	400	0
	14,912	1,595
Attributable taxation	(2,737)	(282)
	12,175	**1,313**

The circular to shareholders dated 18 December 1985 included a provision for extraordinary charges of £15.9 million.

		1986 £'000	1985 £'000
8 Dividends	Interim dividend (1985 – 0.35p net per share)	—	122
	Final dividend of 1.00p net per share	495	—
		495	122
9 Loss attributable to members of the holding company	Dealt with in the accounts of the company	(16,783)	139

As allowed by Section 228 (7) of the Companies Act 1985, the Company has not presented its own profit and loss account.

10 Earnings per share

Earnings per share of 10.07p are based on the profit after taxation before extraordinary charges which amounts to £4,234,000 and on the weighted average of 42,060,986 shares after adjusting for the rights issue during the year. Last year there was a loss per ordinary share of 6.53p on the basis of the total loss excluding minority interests of £2,208,000 in relation to an adjusted 33,833,333 shares. Excluding the loss on office automation, the earnings per share last year amounted to 6.95p based on a profit of £2,350,000.

11 Intangible assets

	Goodwill £'000
Cost	
1 July 1985	3,449
Arising in year	8
Translation differences	(37)
30 June 1986	3,420
Amounts written off	
1 July 1985	29
Provided in subsidiaries	18
Against reserves (see note 23)	3,373
30 June 1986	3,420
Net book value	
30 June 1986	**0**
30 June 1985	3,420

12 Tangible assets

Owned assets	Short leaseholds £'000	Equipment and plant £'000	Total £'000
Cost			
1 July 1985	2,569	7,211	9,780
Translation differences	(34)	39	5
Additions	356	1,774	2,130
Disposals	(131)	(246)	(377)
Own work capitalised	0	255	255
30 June 1986	2,760	9,033	11,793
Depreciation			
1 July 1985	964	2,608	3,572
Translation differences	(15)	28	13
Provided	251	1,295	1,546
Released on disposals	(131)	(137)	(268)
30 June 1986	1,069	3,794	4,863
Net book value 30 June 1986	1,691	5,239	6,930
Assets under finance leases			
Net book value 30 June 1986	0	513	513
Net book value all assets at 30 June 1986	**1,691**	**5,752**	**7,443**
Net book value at 30 June 1985			
Owned assets	1,605	4,603	6,208
Assets under finance leases	0	774	774
	1,605	5,377	6,982

13 Investments in related companies and trade investments

Consolidated

	Related companies			Trade	Total
	Shares at cost	Retained profits	Total	investments	
	£'000	£'000	£'000	£'000	£'000
1 July 1985	618	21	639	29	668
Currency translation	0	2	2	0	2
Share of retained profit for the year	0	225	225	0	225
30 June 1986	618	248	**866**	**29**	**895**

All investments are unlisted.

The Company

	Investments in group companies			Related companies	Total
	Shares	Loans	Total		
	£'000	£'000	£'000	£'000	£'000
Cost					
1 July 1985	14,245	8,985	23,230	618	23,848
Additions	0	7,378	7,378	6	7,384
Reductions	0	(7,402)	(7,402)	0	(7,402)
30 June 1986	14,245	8,961	23,206	624	23,830
Provisions					
1 July 1985	—	—	—	—	—
Provided in the year	(787)	(8,469)	(9,256)	—	(9,256)
30 June 1986	(787)	(8,469)	(9,256)	—	(9,256)
Net book value at 30 June 1986	13,458	492	**13,950**	**624**	**14,574**

14 Capital commitments

	1986	1985
	£'000	£'000
Capital expenditure authorised and contracted	617	199
Capital expenditure authorised but not contracted	0	460

15 Stocks

Work in progress:		
at cost or net realisable value	24,944	23,428
attributable profit	2,124	2,009
Progress payments on account	(21,355)	(20,338)
	5,713	5,099
Finished goods	15	19
	5,728	5,118
Raw materials and consumables	133	169
	5,861	**5,287**

16 Debtors

Consolidated		
Trade debtors	14,462	13,011
Amounts owed by related companies	182	48
Other debtors	677	736
Investment in finance leases:		
due within one year	70	73
due after more than one year	27	99
Prepayments and accrued income	1,752	1,094
Taxation recoverable	952	908
Advance corporation tax	352	150
Client contract deposits	983	0
	19,457	**16,119**
The Company		
Amounts owed by subsidiary companies	1,136	1,122
Other debtors	122	71
Advance corporation tax	352	150
Dividends receivable	1,162	1,162
	2,772	**2,505**

		1986 £'000	1985 £'000
17 Creditors	Amounts falling due within one year		
	Consolidated		
	Payments received on account	2,427	859
	Trade creditors	3,189	3,435
	Amounts owed to related companies	2	1
	Other creditors	2,646	439
	Taxation and other state creditors	4,251	6,248
	Advance corporation tax	202	150
	Accruals	3,551	4,296
	Contingency provision in respect of fixed price contracts	1,000	0
	Dividends proposed	495	0
		17,763	**15,428**
	The Company		
	Amounts owed to subsidiary companies	685	752
	Other creditors	681	356
	Taxation and other state creditors	143	233
	Advance corporation tax	202	150
	Accruals	0	26
	Dividends proposed	495	0
		2,206	**1,517**

The Company supports the banking facilities of certain overseas subsidiaries by either direct guarantee (amount drawn at 30 June 1986 £270,000 — 1985 £2,335,000) or by indemnifying its bankers in respect of their guarantees (amount drawn at 30 June 1986 £263,000 — 1985 £306,000). An overseas subsidiary has provided its bankers with a charge on certain of its assets but had no relevant indebtedness at the end of the financial periods covered by this report.

18 Creditors	Amounts due after more than one year		
	Bank loans repayable between two and five years	0	306
	Hire purchase liabilities	11	0
	Finance lease liabilities		
	Two to five years	386	550
	More than five years	5	33
	Other creditors	1,075	125
		1,477	**1,014**
19 Deferred taxation	Provision is made in the accounts for deferred taxation at the full potential liability as follows:		
	Accelerated capital allowances	666	1,933
	Other short term timing differences	(476)	(159)
	Trading losses	0	(771)
	Foreign subsidiaries	(12)	(20)
		178	983
	1 July 1985	983	1,585
	Translation difference	(6)	(1)
	Provision in respect of current year	(322)	(319)
	Overprovision for prior years	(127)	0
	Extraordinary item	(350)	(282)
	30 June 1986	**178**	**983**

20 Net assets of discontinued activities

			1986		1985
			£'000		£'000
Tangible fixed assets			146		3,398
Intangible fixed assets			0		3,996
			146		7,394
Current assets					
Stocks	0		7,595		
Debtors	509		7,342		
	509		14,937		
Current liabilities	(382)		(6,242)		
Net current assets		127			8,695
Total assets less current liabilities		273			16,089
Deferred liabilities		0			(469)
		273			**15,620**

21 Other financial commitments

There were annual commitments under operating leases as follows:

	1986		1985	
	Land & buildings £'000	Other £'000	Land & buildings £'000	Other £'000
Expiring within one year	440	373	375	175
Expiring in the second to fifth year inclusive	1,126	862	563	864
Expiring after five years	2,113	0	2,185	6
	3,679	1,235	3,123	1,045

22 Called up share capital

	1986 £'000	1985 £'000
Authorised share capital 52,000,000 ordinary shares of 10p each	5,200	3,750
Called up share capital 49,500,000 ordinary shares of 10p each	**4,950**	**3,500**

On 10 January 1986 the authorised share capital was increased by 14,500,000 ordinary shares of 10p each and these shares were issued on 20 January 1986.

At 30 June 1986 options granted under share option schemes were outstanding as follows:

Number of shares	Price	Normal dates of exercise
25,506	365	1987-1990
81,344	405	1987-1994
654,988	149	1988-1991
235,385	165	1988-1995
700,000	155	1989-1996

23 Share premium account and reserves

	Share premium account £'000	Capital reserve £'000	Other reserves £'000	Profit and loss account £'000
Consolidated				
1 July 1985	12,599	0	2,088	607
Exchange difference on translation of net assets at 1 July 1985			14	668
Premium on issue of new shares net of expenses	13,650			
Reduction of share premium account	(17,344)	17,344		
Write off of goodwill				
Continuing activities		(3,373)		
Discontinued activities		64		
Release of capital reserve to profit & loss account		(14,035)		14,035
Retained loss for the year				(8,436)
Transfers			15	(15)
30 June 1986	**8,905**	**0**	**2,117**	**6,859**

23 Share premium account and reserves

	Share premium account £'000	Profit and loss account £'000
The Company		
1 July 1985	12,599	440
Premium on issue of new shares net of expenses	13,650	
Reduction of share premium account	(17,344)	17,344
Retained loss for the year		(16,783)
	8,905	**1,001**

Following the Extraordinary General Meeting held on 11 April 1986, the High Court's agreement was obtained for a reduction of the share premium account by the sum of £17,344,000 to £8,905,000, effective on 23 May 1986. At this date the company had creditors other than its subsidiaries amounting to £175,000. All of these were satisfied before the 30 June 1986 and the company is thereby released from the undertakings which it provided to the Court.

Goodwill has been written off against capital reserves in accordance with the resolution passed at the above Extraordinary General Meeting.

24 Contingent liabilities

Subsidiaries have provided indemnities to their bankers in support of performance bonds and guarantees amount to £3,164,746.

25 Principal operating subsidiaries

Logica UK Limited (Great Britain)
Logica Cambridge Limited (Great Britain)
Logica Communications and Electronic Systems Limited (Great Britain)
Logica Consultancy Limited (Great Britain)
Logica Energy and Industry Systems Limited (Great Britain)
Logica Financial Systems Limited (Great Britain)
Logica Software Products Limited (Great Britain)
Logica Space and Defence Systems Limited (Great Britain)
Logica BV (Netherlands)
Logica SA (Belgium)
Logica GmbH (West Germany)
Logica Svenska AB (Sweden)
Logica Inc (USA)
Logica Pty Limited (Australia)

At 30 June 1986 these companies were all wholly owned.

26 Related companies

Jardine Logica Systems Limited
The company holds 50% of the issued share capital of Jardine Logica Systems Limited which is registered in Hong Kong.

Logica General Systems Spa
The company holds 49.8% of the ordinary shares and 50.8% of the preference shares of Logica General Systems Spa which is registered in Italy. These shares were purchased for cash at 1 May 1985 and their results for the fourteen months since purchase are included in the consolidated accounts.

The business activities of these companies are similar to those undertaken by the other Logica companies.

1 Basis of accounting and consolidation

The accounts are prepared under the historical cost convention in accordance with the Companies Act 1985. They are the result of the consolidation of the accounts of the Company and its subsidiaries and also include the relevant share of the results of related companies. The group accounting policies conform with UK accounting standards and when necessary adjustment is made to the statutory accounts of overseas subsidiaries in order to present the group accounts on a consistent basis.

2 Turnover

Turnover represents amounts invoiced to clients net of amounts billed in advance and excluding VAT.

3 Recognition of profits

Profit on contracts for the supply of professional services at pre-determined rates is taken as and when the work is billed irrespective of the duration of the contract.

Profit is taken on fixed price contracts whilst the contract is in progress, having regard to the proportion of the total contract which has been completed at the balance sheet date. Provision is made for all foreseeable future losses.

Income from finance leases is taken to profit and loss account based on a constant periodic rate of return on the net cash investment in each lease.

4 Stock and work in progress

Physical stock and work in progress is valued at the lower of cost and net realisable value.

The valuation of work in progress on fixed price contracts is adjusted to take up profit to date or foreseeable losses in accordance with paragraph 3 above. The inclusion of this attributable profit supercedes the statutory valuation rules for current assets to enable the accounts to give a true and fair view.

Other work in progress is valued at cost or at estimated net realisable value if lower. Cost comprises:

- professional work in progress valued at the cost of salaries and associated payroll expenses of employees engaged on assignments and a proportion of attributable overheads.
- unbilled expenses incurred and equipment purchased for clients in connection with specific contracts.

5 Research and development

Research costs are written off in the year in which they are incurred unless they are to be reimbursed by third parties. Development costs are also written off in the year in which they are incurred unless they are to be reimbursed by third parties or they result in the production of an identifiable, saleable product.

6 Depreciation

Depreciation is provided at rates calculated to write down the cost of all tangible fixed assets over their estimated useful lives on a straight-line basis. The annual rates of depreciation used are as follows:

Office equipment	10%
Computer equipment	20%
Motor cars	25%
Plant	20%
Leaseholds	equally over life of lease

7 Foreign currency translation

The assets, liabilities and the trading results of foreign subsidiaries are translated into sterling at the rate of exchange ruling at the date of the balance sheet.

Differences arising on restatement of the net investment in foreign subsidiaries and related net foreign currency borrowings are dealt with as adjustments to reserves.

All other differences on exchange arising in the year are taken to the profit and loss account.

8 Deferred taxation

Provision is made for deferred taxation to take account of timing differences between the treatment of certain items for accounts purpose and their treatment for tax purposes. The provision is maintained to the extent that timing differences are not expected with reasonable probability to continue into the foreseeable future.

9 Tangible fixed assets

Tangible fixed assets are shown at cost. Cost in this context includes the initial capitalised values of assets funded by finance leases.

Assets financed by leasing agreements that give rights approximating to ownership are treated as if they had been purchased outright. The amount capitalised is the present value of the minimum lease payments payable during the lease term. The corresponding leasing commitments are shown as obligations to the lessor. Lease payments are treated as consisting of capital and interest elements and the interest is charged to the profit and loss account on a constant periodic rate of charge basis.

10 Related companies

A related company is a legal entity, not being a subsidiary, in which the group has an interest of between 20% and 50% and over whose commercial and financial policy decisions the group exercises significant influence. The group's share of the profits less losses of all significant related companies is included in the group's profit and loss account on the equity accounting basis. The results are calculated from the latest available audited accounts adjusted to incorporate unaudited results for more recent periods.

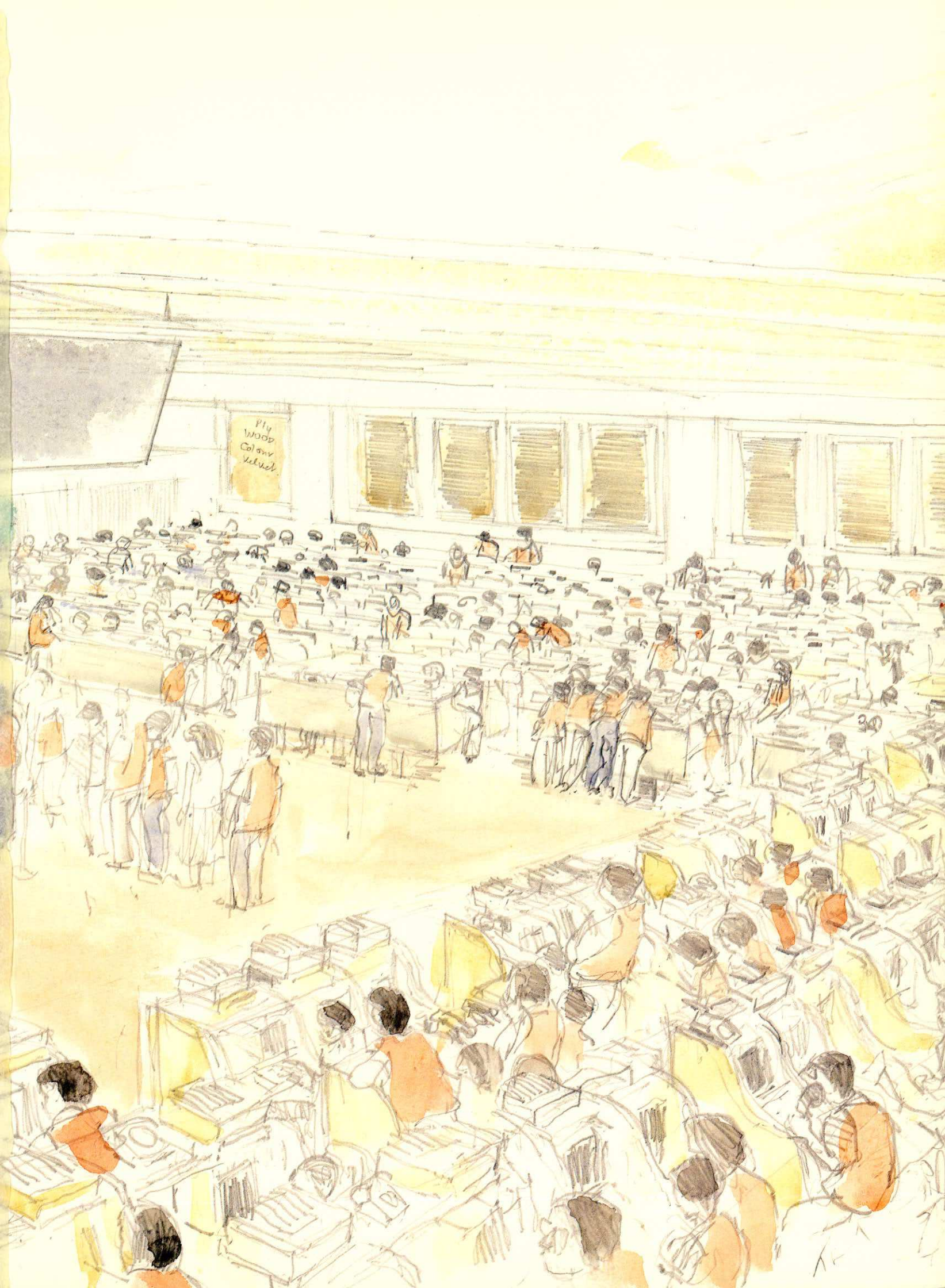
REPORT OF THE AUDITORS

Report of the Auditors to the Members of Logica plc

We have audited the accounts set out on pages 34 to 47 in accordance with approved Auditing Standards.

In our opinion the accounts give a true and fair view of the state of affairs of the company and the group at 30 June 1986, and of the profit and source and application of funds of the group for the year then ended, and comply with the Companies Act 1985.

Price Waterhouse & Co.
Chartered Accountants
London
24 September 1986


Ply
WOOD
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