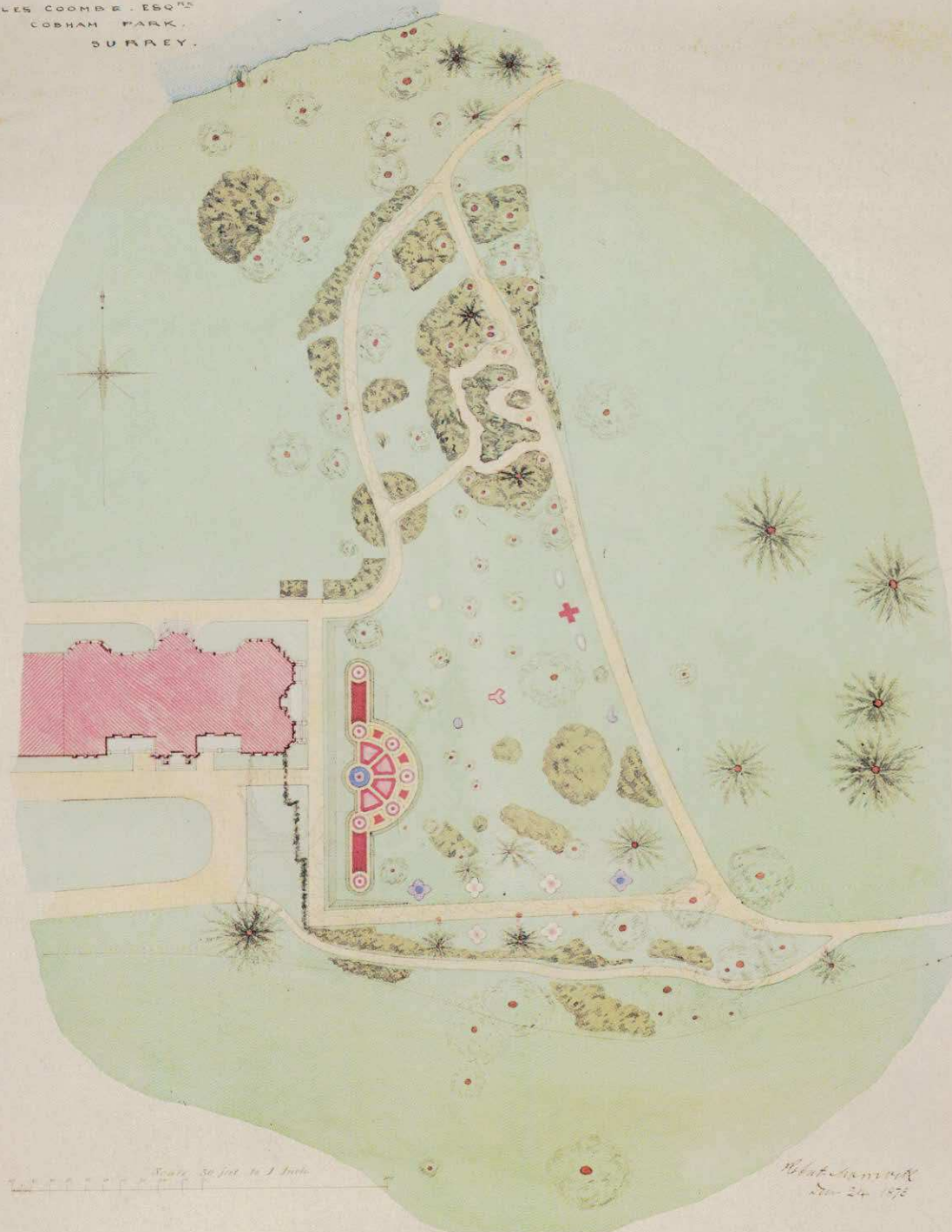


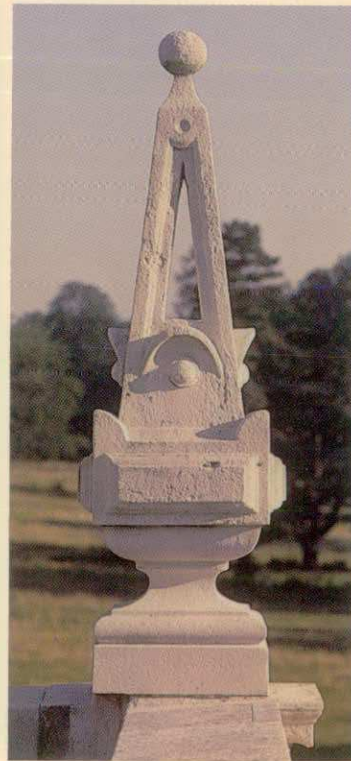
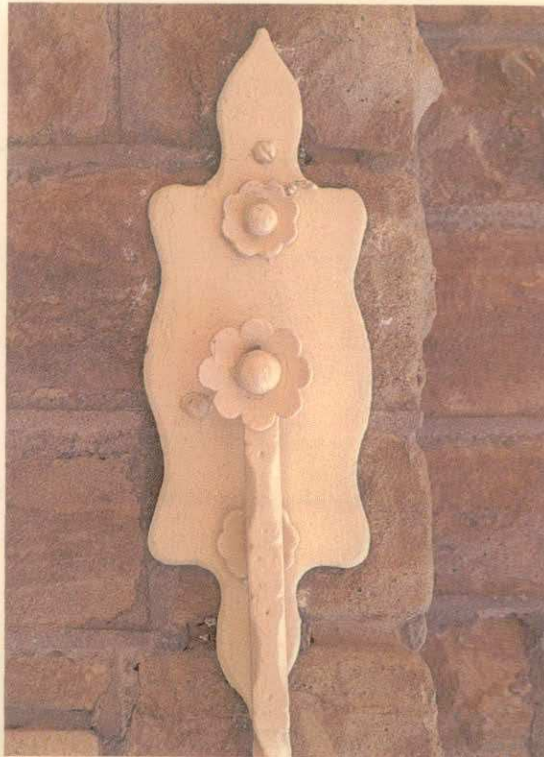
Logica 1981

CHARLES COOMBE, ESQ^{RS}
COBHAM PARK,
SURREY.



Scale 30 feet to 1 inch

W. H. Sturges
Dec 24 1876



Logica Annual Review 1981

The impressive architecture of Cobham Park provides the illustrative theme for Logica's 1981 Annual Review. Built in the early 1870's, this Victorian mansion is set in 16 acres of parkland 20 miles from London.

Logica came to Cobham Park in 1979 and undertook an extensive programme of restoration and redecoration. A number of advanced technology projects in defence, aerospace, finance, software engineering and product development are in progress at Cobham, which is also equipped with computer commissioning and conference facilities.

The cover illustration shows a plan of the building and grounds, dated 1873. The colour photographs inside represent series of textures and patterns taken from architectural features and construction materials.





The Logica Group

Logica Securities Limited

Directors

Pat Coen
Peter Harbidge
Philip Hughes (chairman)
David Mann
Len Taylor (managing director)

Logica Holdings Limited

Directors

Frits Böttcher
Pat Coen
Peter Harbidge
Philip Hughes (chairman)
David Mann
Len Taylor (managing director)

Logica VTS Limited

Directors

Pat Coen (chairman)
Gordon Olson (managing director)
Alan Ryden

Logica Limited

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London W1A 4SE
United Kingdom
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Telex 27200

Logica Inc

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New York NY 10017
USA
Tel (212) 599 0828
Telex 238539

Logica Pty Limited

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North Sydney
NSW 2060
Australia
Tel (2) 436 1700
Telex 22632

Logica VTS Limited

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United Kingdom
Tel (1) 637 5171
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Netherlands
Tel (10) 33 08 44
Telex 25519

Logica Svenska AB

Norra Stationsgatan 79-81
S-113 33 Stockholm
Sweden
Tel (8) 34 91 10
Telex 14187

Logica SA NV

rue de Livourne 80
1050 Brussels
Belgium
Tel (2) 537 7494
Telex 26025

The Logica Group

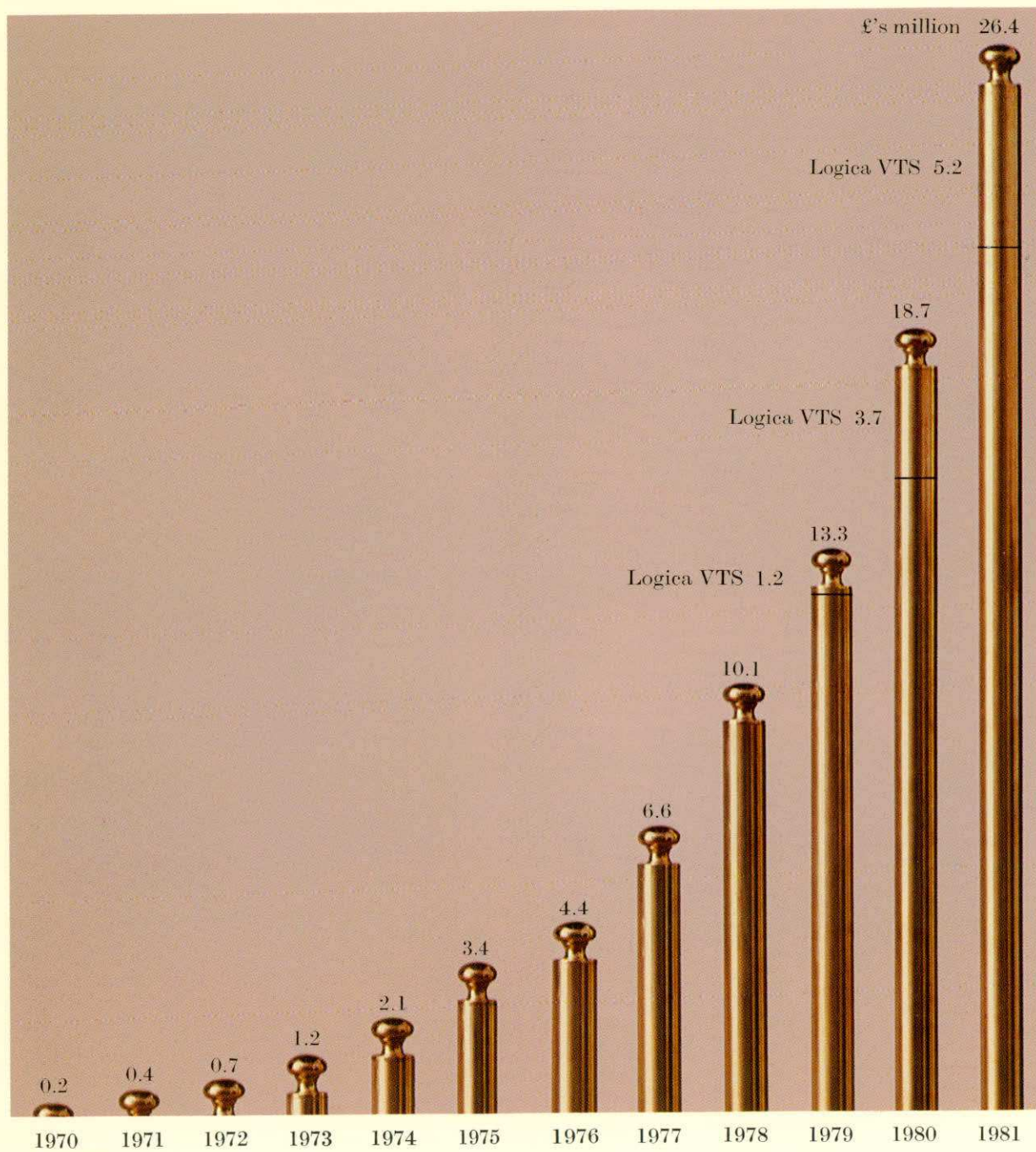
The Logica Group has two companies, Logica Holdings with its subsidiaries, and Logica vrs. Logica Holdings – or just Logica for short – carries out consulting and systems implementation in the broad fields of computing and communications. There are operating companies and branches in the UK, the Netherlands, Belgium, Sweden, the USA, the Middle East and Australia. Logica vrs develops, manufactures and supplies electronic word processing and advanced office systems products. Logica and Logica vrs are formally linked through a common controlling company owned in the main by staff shareholders. Together we call this set of companies the Logica Group.

At year end the Logica Group had just over 1000 staff, compared with just under 900 staff a year ago. Revenues were £26.4 million as against £18.7 million last year, a growth of 41%. Average revenue per person was £27,500 as against an equivalent £22,000 the previous year. Even allowing for inflation at an estimated 13% in the countries of operation, this still shows a net real growth in output per person of 12%.

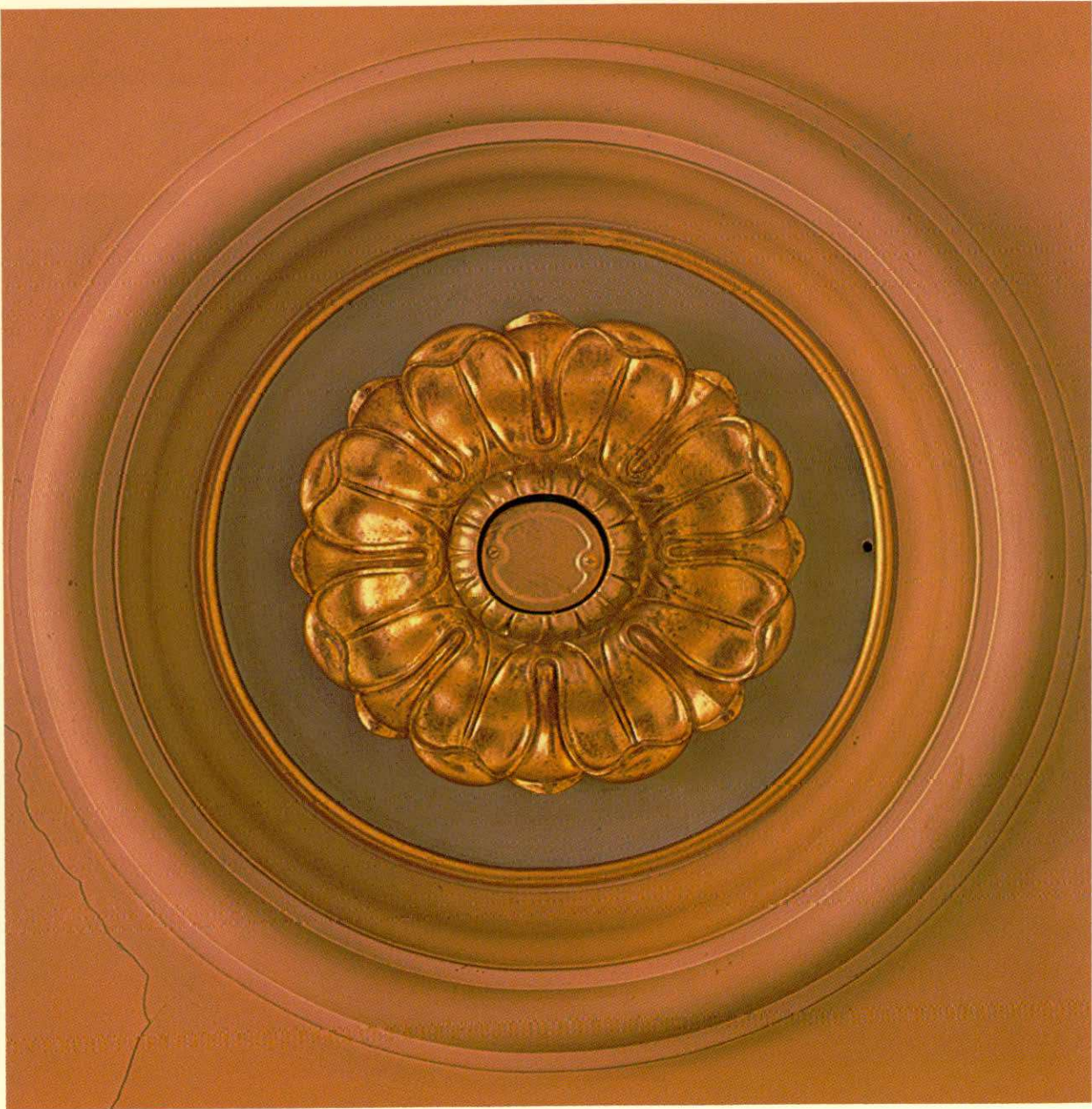
The separate reports which follow show the very great diversity of activities ranging from high level policy and marketing consultancy to the mass production of electronic hardware. Throughout there is a commitment to the dual approach – on the one hand consultancy and the design and supply of one-off systems; on the other the design, manufacture and supply of advanced products. We believe that these belong together, and that the supposed difference between product and service companies will become less and less distinct.

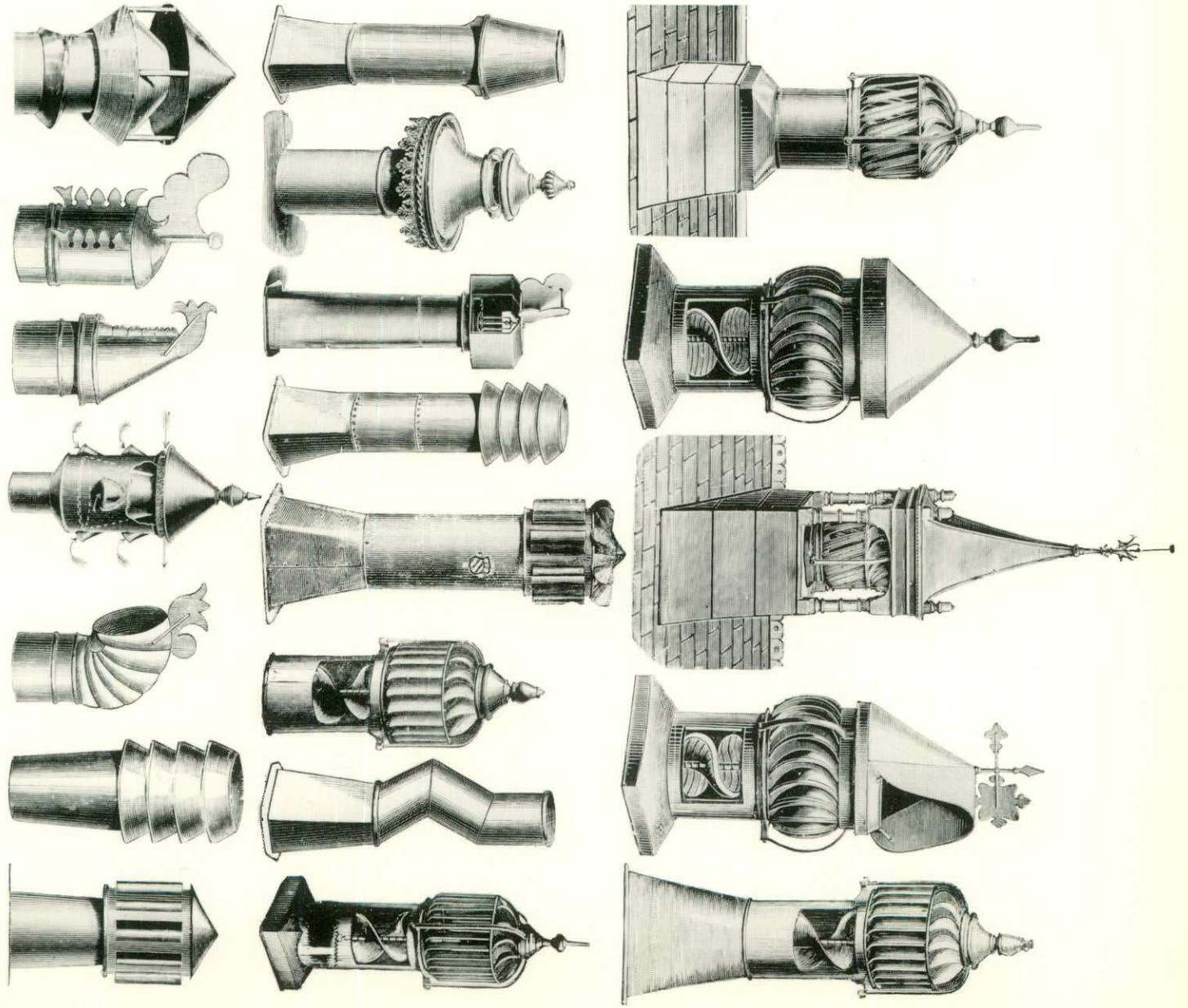
In previous years we have published our Annual Review as a tri-lingual document. As the operations became increasingly diverse this layout has led to a longer and longer review, not as easy to read as it might be. This year we publish separate single language versions. From the very start Logica has been committed to widespread international operations. In the years ahead we plan to further this commitment.

Turnover



Logica Holdings Limited





Financial Review

At the end of last year we stated that the recession in the developed world was affecting high technology rather less than other industries. Whilst this could still be said, the depth and the breadth of the world recession increasingly impacted our industry as the year progressed. Trading conditions deteriorated beyond general expectation, particularly in Europe.

Despite this unfavourable climate, Logica continued its growth. Turnover increased from £15.0 million to £21.2 million, an increase of 41%. New business secured grew even faster, by 50% to £23.1 million. Pre-tax operating profits were £1.7 million. This showed recovery to the previous pattern of earnings growth after the setback of last year.

Taxation payable on this year's profit amounts to £0.7 million. Due to changes in taxation legislation the deferred taxation provision of £0.7 million has been written back. As a result of this and a tax repayment of £0.1 million, the profit after taxation amounts to £1.8 million.

Cash flow in a rapidly growing and successful services company is potentially always a problem, given the high levels of corporation tax that have to be paid. However, during the year we were able to effect a decrease in our overdraft from last year's level without calling on extra equity or loan capital. Overall borrowings were reduced by about £0.3 million with a consequential improvement in gearing. Given the growth in revenues this was a considerable achievement.

The strength of sterling against other currencies right up to the end of the year had a major impact on one of our traditional activities, the exporting of technology from the UK. This was

down as a proportion of total business, but even so as much as 42% of turnover resulted from clients outside the UK. Of particular significance was the outstanding success of Logica Inc in the USA, both in its growth of 100% in the year, and in its contribution to overall profits.

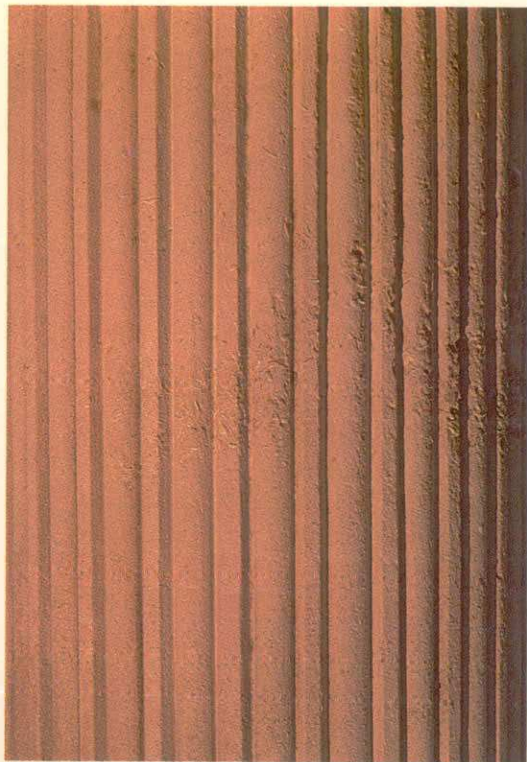
On 30 June 1981 our existing operations in the USA merged with the operations of Freyberg Systems Associates to form an expanded Logica Inc owned 75% by Logica and 25% by the staff shareholders of Freyberg. Freyberg Systems Associates has a significant reputation for the design and implementation of automated funds transfer systems for the US banks. Add this to our existing operations in the same field and in the wider applications of communications technology, and the enlarged company has a very strong position in the market with excellent prospects for growth. Full management and operational control did not merge until after the financial year end, therefore their results have not been consolidated in the attached accounts.

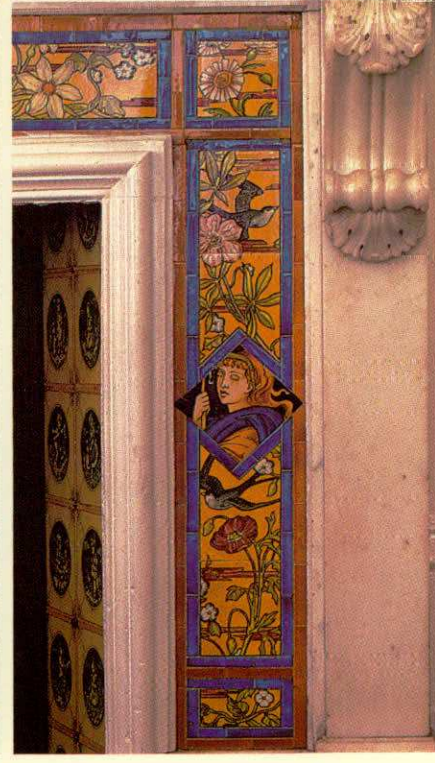
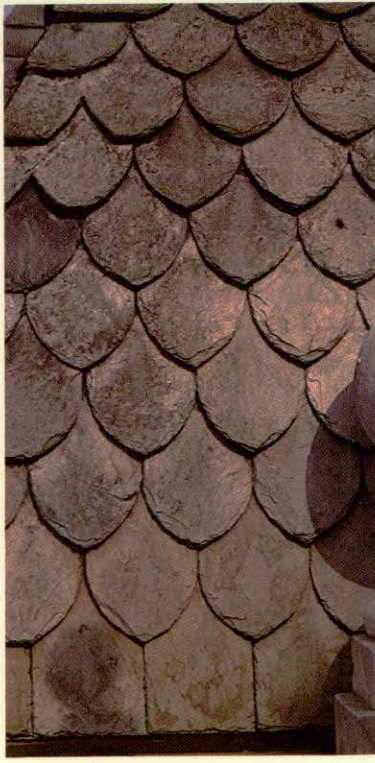
Computing and communications are amongst the very few sectors of economic activity where by general consensus there are prospects of real growth in the years ahead. As a consequence there now are sufficient investment funds available for good high technology ventures. But there is manifestly a severe shortage of adequate human resources to allocate and manage these funds profitably. Logica consistently demonstrates it does have such resources and looks forward to the next year as one in which it will continue to strengthen its position in the market.

Financial Review

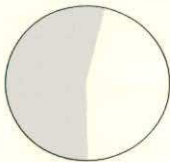
Logica Holdings Limited and Subsidiaries	1981	1980
Summary Profit and Loss Account for the year ended 30 June 1981	£'000	£'000
Charges billed	21,200	15,030
Change in Work in Progress during year	(601)	564
	<u>20,599</u>	<u>15,594</u>
<i>Less</i>		
Salaries and Operating Expenses	18,937	15,167
	<u>1,662</u>	<u>427</u>
Trading Profit after provision for future losses		
<i>Add</i>		
Unrealised Profit on Foreign Exchange	39	(18)
Bridging Loan Interest	—	(113)
	<u>39</u>	<u>(131)</u>
Profit before Tax	1,701	296
<i>Less</i>		
Taxation Payable	732	(113)
Taxation Recovered	(133)	—
Taxation Deferred	(660)	(47)
	<u>(61)</u>	<u>(160)</u>
	<u>1,762</u>	<u>456</u>
<i>Less</i>		
Transfer to Special Reserve	7	52
	<u>7</u>	<u>52</u>
Net Profit after Taxation	£1,755	£404

Logica Holdings Limited and Subsidiaries	1981		1980
Consolidated Balance Sheet at 30 June 1981			
	£'000		£'000
Funds Employed			
Fixed Assets at cost less depreciation	2,090		1,786
Current Assets			
Work in Progress	1,416		2,015
Debtors	4,670		3,680
Taxation Recoverable	114		188
Bank Balances	568		1,104
	<hr/>		<hr/>
	6,768		6,987
<i>Less</i>			
Current Liabilities			
Bank Loans and Overdrafts	1,127		1,957
Creditors	2,959		3,500
Taxation	333		0
	<hr/>		<hr/>
Net Current Assets	2,349		1,530
	<hr/>		<hr/>
	4,439		3,316
Deferred Liabilities	225		264
Deferred Taxation	4		604
	<hr/>		<hr/>
	229		868
	<hr/>		<hr/>
	£4,210		£2,448
Financed by			
Share Capital and Reserves			
Share Capital	155		155
Share Premium	4,308		4,308
Reserves	59		52
Retained Earnings	2,277		522
	<hr/>		<hr/>
	6,799		5,037
<i>Less</i>			
Excess of cost of subsidiaries over net tangible assets at date of acquisition	2,589		2,589
	<hr/>		<hr/>
	£4,210		£2,448

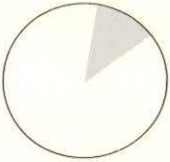




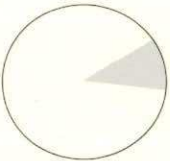
Analysis of Turnover by Client Location



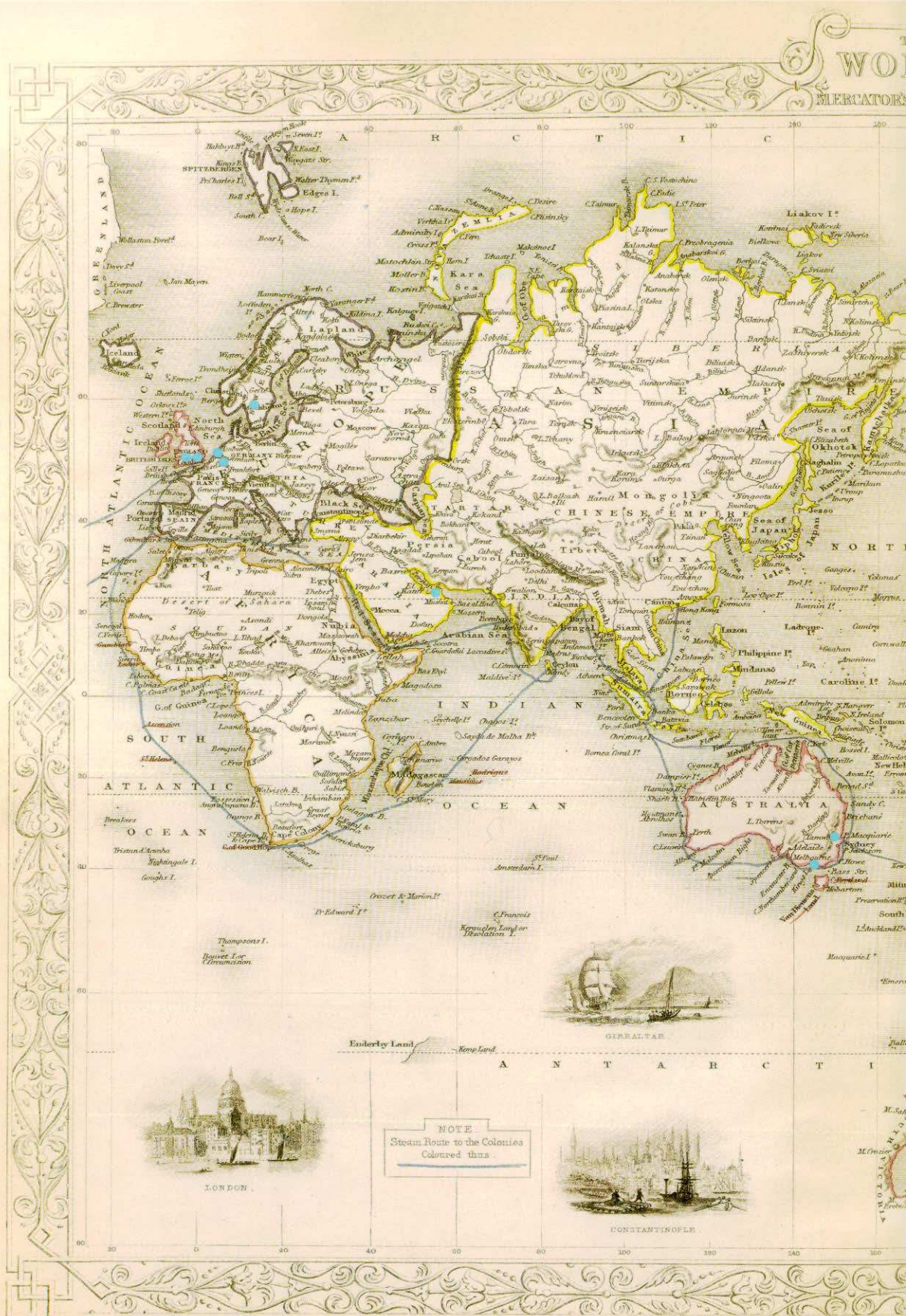
United Kingdom
58%



Benelux
16%

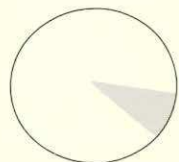


Rest of Europe
11%

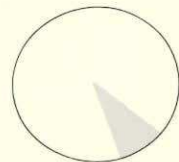




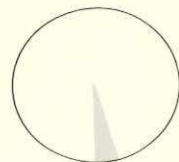
Geographical
Location
of Logica's
Offices



United States
7%



Middle East
5%



Rest of World
3%

Worldwide Operations

United Kingdom

Despite the severe recession operations in the UK continued to grow. Revenues grew by 29% and sales by 60%. Some trends, noted last year, were further developed.

The push towards software products continued. RAPPORT, the portable relational database system, sold well in its second year in the market. Sales agents are being established in those major markets not covered directly by Logica operating companies. With this was combined the selling of software tools to assist in the critical area of systems development.

The range of work for the television industry was extended. Our teletext generation system, CONTEXT, was supplied to broadcasters in Austria and the USA. We acquired from the BBC and are further developing a remarkable system called FLAIR that allows the graphic designer to 'draw' and 'paint' direct on to a television screen. Microprocessor based monitor and control units are being supplied for the new Fourth Channel for television in the UK.

At year end British Telecom decided after the successful trial of Prestel International to launch Prestel as an international, as well as a national, service. Logica was appointed to manage the sales and marketing, further extending our commitment to videotex as well as teletext.

There was a rapid growth in work for the oil industry. Projects were undertaken for all sections of the industry - exploration, production, manufacture, research, distribution and head office operations. A further expansion in work for this sector is planned, in the UK as well as in the Netherlands and the Middle East.

Banking and finance continued to be a major work sector, with insurance companies and stockbrokers added to our well established base of clients in banking. During the year the major UK banks decided to implement a new network approach to fast inter-bank funds transfer, linking their main computing centres. Logica was selected to design this system, one of the most advanced of its kind in the world.

A wide variety of projects was undertaken to further the planning for the design and use of new satellites. These included policy and market studies for the European Space Agency and for British Telecommunications International, and detailed design for on-board and ground segment computing. Logica is well placed to participate in the expected expansion of the exploitation of space in the 1980s.

The defence market, though generally static, was again of great importance to us. In this sector we continued a move from subcontractor roles towards more opportunities for project responsibility. We won a major local area network development based on Logica VTS' POLYNET system.

Netherlands

In spite of an unexpectedly fierce recession in the Netherlands, the year under review was one of solid growth for Logica (Benelux) BV. Professional services sales were up by over 50% on the previous year; the company grew to more than 100 staff.

The energy sector proved particularly important. One of the year's major achievements was to win, against strong international competition, a multi-million guilder contract from NV Nederlandse

Gasunie for the turnkey supply of a complex supervisory control and data acquisition system for the Netherlands' trunk gas pipeline network. For a number of international oil companies Logica undertook projects ranging from strategy studies to middleware design and development. The market remained excellent for our data communications skills.

In addition to a wide range of advanced projects undertaken locally, the Rotterdam based company exported services to Germany, Sweden, Brazil and the USA. Also noteworthy was the increase in work undertaken for local government and utility organisations.

There was strong interest in the Netherlands in Logica's rapidly developing videotex skills; this was partly the result of our work there in promoting Prestel International.

In the products area, Logica continued successfully to market RAPPORT. As a result of the Gasunie work, we began developing a 32 bit VAX version of the Master Control package, RPMC. At year end we decided to expand further our activity in this area and to add XENIX* to the product range.

Belgium

In Logica SA NV's second year of operation only very modest growth was possible and our original targets were not fully achieved. We undertook a variety of projects in the manufacturing and financial sectors and for the European Economic Community. Despite a difficult year we are well placed to expand as the economy recovers.

United States

In its second year as a full operating company, Logica Inc continued to grow rapidly; revenues more than doubled. The company reported substantial profits for the year.

Banking and communications systems again provided a significant proportion of our business. Work continued in conjunction with Perkin Elmer on implementing the large and complex communications network for US internal airlines. Our client base has expanded in the banking and computer manufacturing industries and we have achieved the traditional Logica mix of consultancy and implementation assignments.

The sale of a CONTEXT system to the major broadcasting and cable tv company, Field Electronic Publishing, was of great importance. This sale coincided with the establishment of the new venture BVT (British Videotex and Teletext), based in New York and Washington. Funded jointly by the UK Department of Industry, British Telecom and Logica, BVT will market British technology in this rapidly developing area.

BVT began operations against a background of substantial live operating experience of videotex and teletext systems in the UK, which greatly surpassed that of any other country. BVT has undertaken the promotion within the US of this technology and has begun by actively supporting a British submission on standards to the Federal Communications Commission.

At year end Logica announced plans for expansion in the American marketplace. We acquired new offices in New York and began to build up sales effort elsewhere on the East Coast and in California.

The merger with Freyberg Systems Associates brought with it very high quality staff, some significant products, an impressive client base and branch offices in Boston and San Francisco.

Australia

For the first time, revenues and sales in Australia each exceeded a million dollars for the year. The opening of the Melbourne office a year ago has led to a growth of activity in Victoria to complement the client base in New South Wales and Canberra.

The recruitment of a number of senior staff led to a broadening of the range of services offered, particularly in market surveys and mathematical modelling. Important projects in this area were undertaken for Telecom Australia.

The company has a very high reputation in strategic consultancy, and hence a sound client base for the expansion of implementation work in transaction orientated and commercial fields.

Sweden

Logica Svenska AB undertook a major reorganisation of its operation in order to expand further in the professional services area and launch new software products on the Scandinavian market. During the year the company moved to new, larger offices.

Financial organisations, together with electronics and computer manufacturers, continued to be our main clients. As communications experts we

provided a series of seminars on advanced communication topics to a spread of clients. We also worked during the year on development of test methodology for interactive systems, development of different protocol handlers for batch and interactive processing and computer evaluation for new large scale projects.

Middle East

In continuing development of the Arab Middle East market this year, Logica opened a branch office in Abu Dhabi to support existing projects and provide a base for further work in the Gulf States. During the year projects have been undertaken in Saudi Arabia, Iraq, Kuwait, Abu Dhabi, Qatar and Libya.

In the area as a whole more attention is now being directed towards high technology; computing is expected to be a major growth industry over the next few years.

We have been particularly active in the oil industry and the finance sector, with major assignments completed for important clients, among them the Abu Dhabi National Oil Company (ADNOC) and the Riyad Bank. The installation and acceptance of a turnkey system for the Libya Insurance Company represents one of the first on-line commercial transaction processing systems in Libya.

Analysis of Turnover

Analysis by Work type (%)

Consulting

Management and Market Studies 12

Project Management/
Systems Audit 7

Communications
Systems 7

Computing Techniques 3

DP Consulting
and Systems Analysis 10

*Software Product
Development and Sales* 3

Implementation

18 Total Systems and
Hardware Supply

7 DP and Systems
Software

5 Scientific Applications

28 Real-Time and
Communications Systems

Analysis by Industry Sector (%)

Space and Defence 19

Central and Local
Government 7

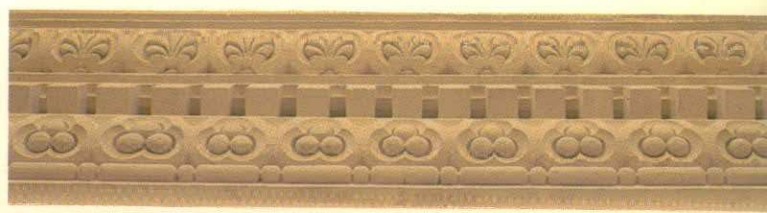
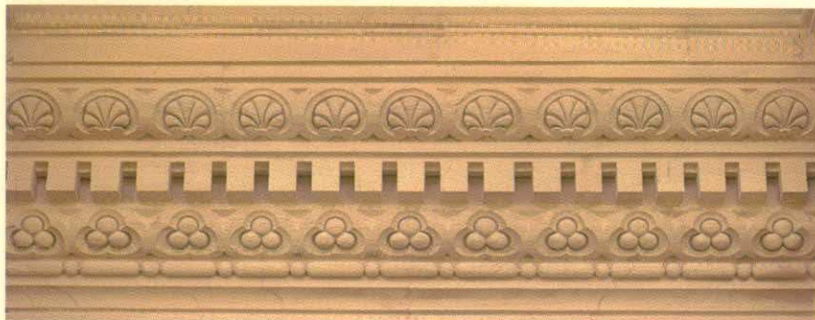
Telecommunications and Media 21

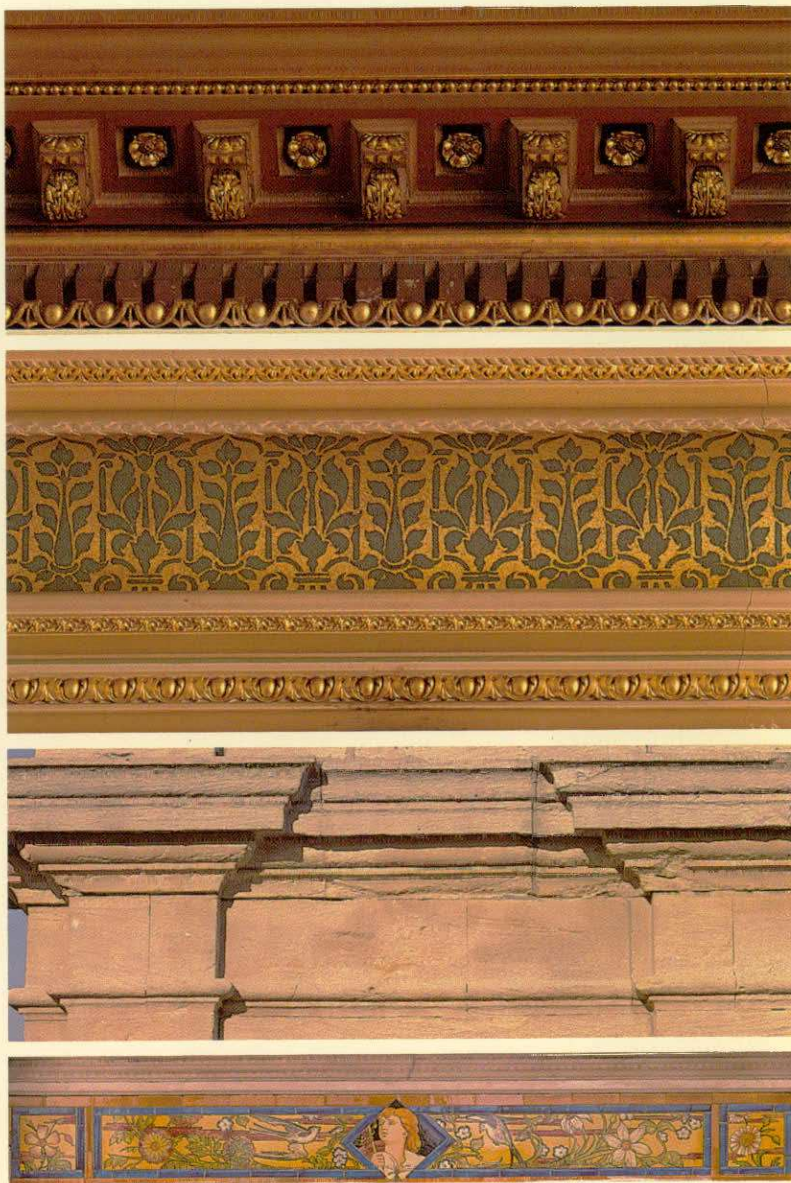
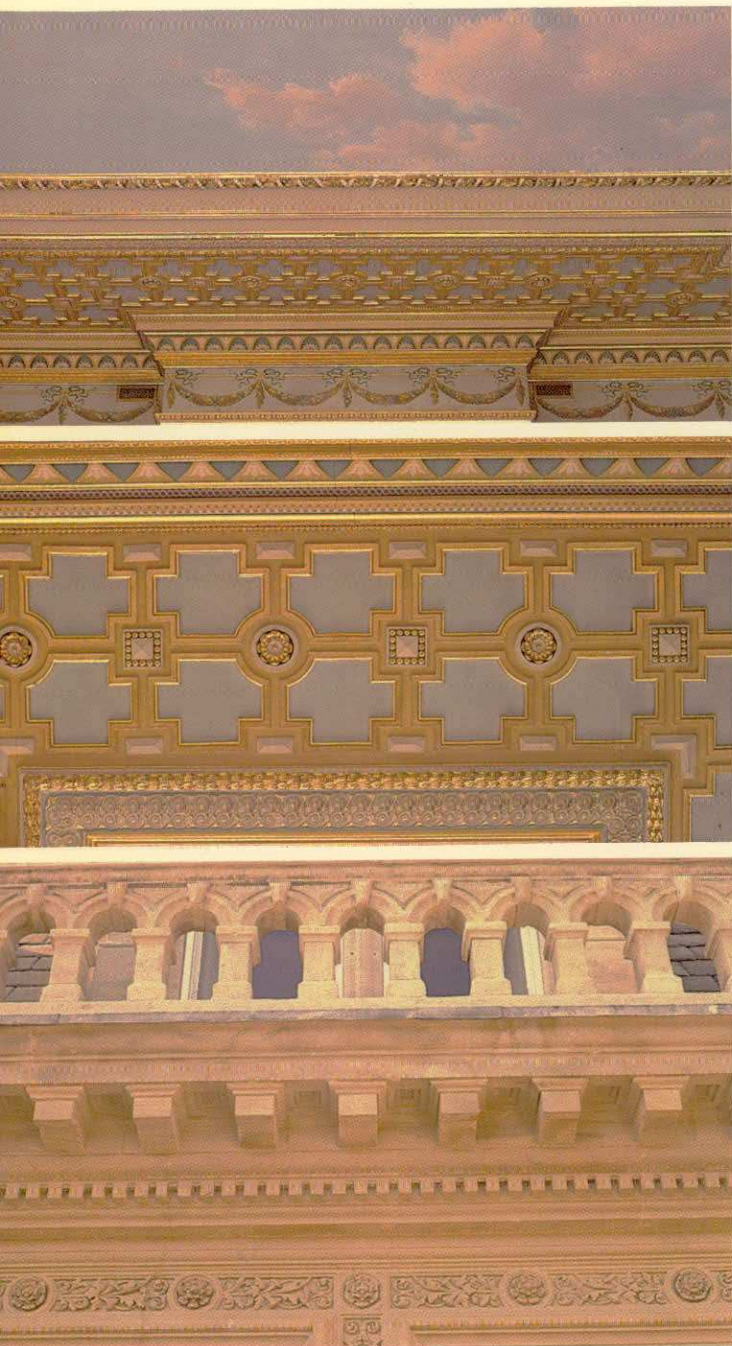
11 Computing and Electronics

12 Manufacturing, Retailing
and Transportation

15 Energy and Utilities

15 Banking and Finance





Defence and Space

Defence is a major sector of our work in Europe, both for individual national governments and for NATO. The European Space Agency remains the main client for space projects but in addition prospects now exist in certain national space programmes.

The British Royal Air Force network, UNITER, is designed as a secure and survivable trunk network for integrated voice and data traffic. Logica acted as consultants to the MOD Procurement Executive for the feasibility study and to Plessey Defence Systems for their competitive project definition study.

The Director General of Ships of the UK Ministry of Defence retained Logica to provide long term support in the development of an advanced system for the computer-aided design of naval vessels.

For the UK Admiralty Underwater Weapons Research Establishment, Logica assisted in research on processing sonar data using image processing and pattern recognition techniques.

For the Royal Signals and Radar Establishment (RSRE) and the UK Meteorological Office, Logica designed and developed FRONTIERS, a short term rainfall monitoring and forecasting system which combines data from ground radars and from satellites.

In a project concerned with remote sensing of Earth resources for the European Space Agency, Logica acted as prime contractor in a study of the data communications and data processing involved in linking satellites with their users. The results will be used to enhance the Earthnet system which receives, archives, processes and disseminates data to a large community of users.

Westland Helicopters are using simulation in the design of the Sea King replacement helicopter which will fulfil an anti-submarine role for the British and Italian Navies. Logica was commissioned to assist with simulation of functions in the rear cabin which include sensor, data management and display systems.

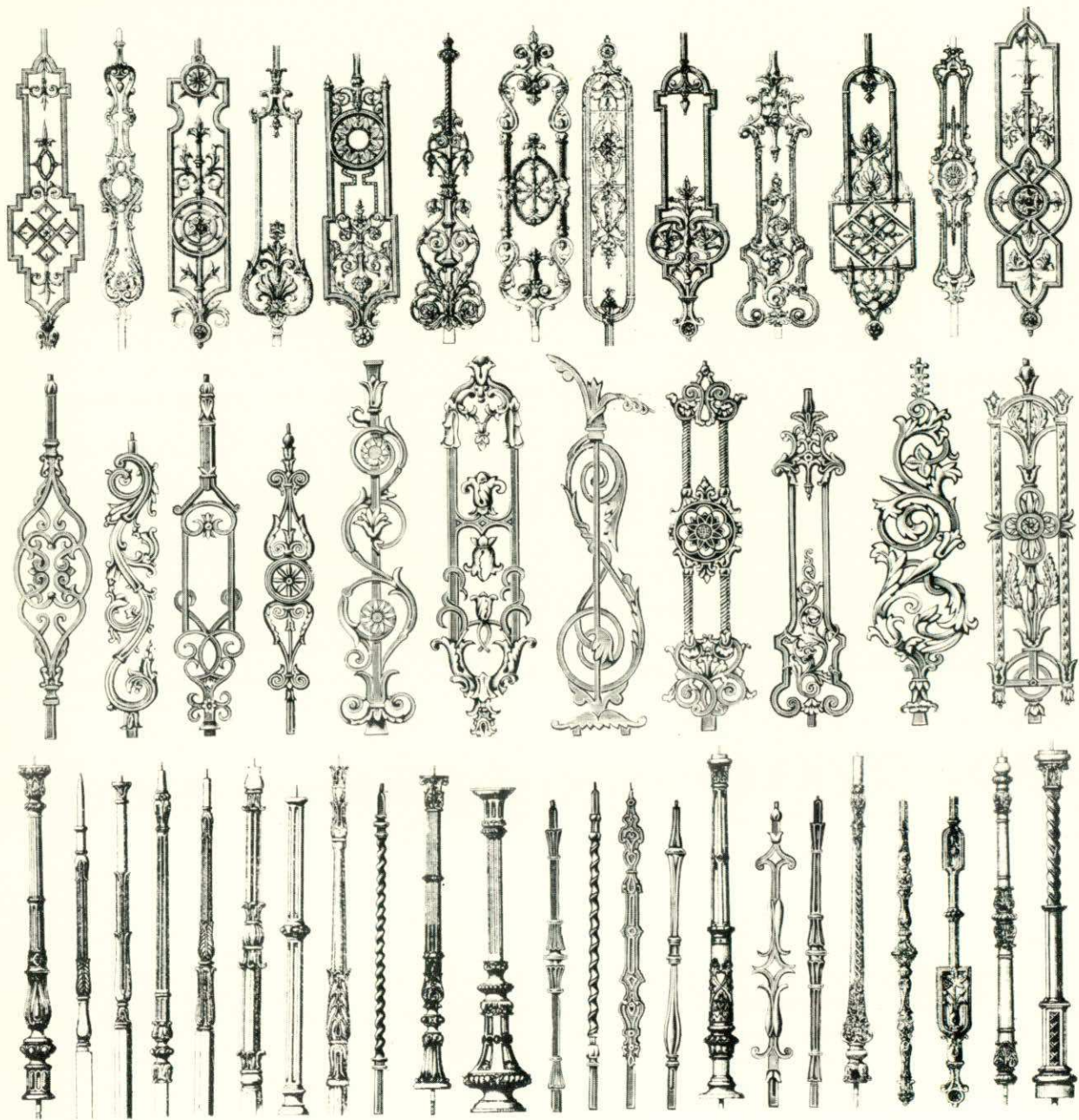
Logica was prime contractor for a study to assist the European Space Agency in defining policy for new communications satellites. The study predicted traffic demands over the next 20 years and investigated trends in technology relating to satellites and their control equipment, taking account of political considerations.

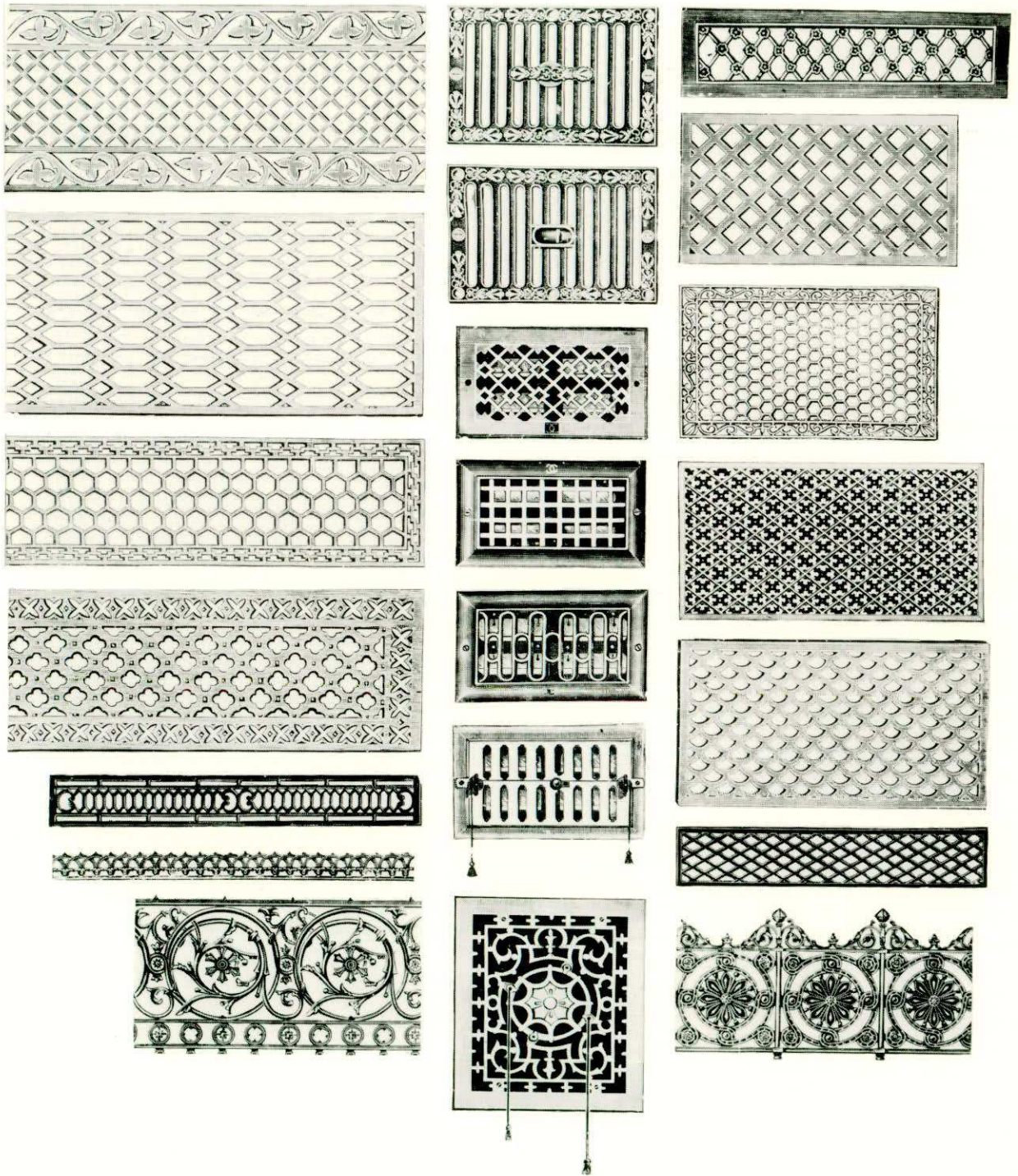
As consortium members Logica participated in two major NATO projects. For Allied Command Europe (ACE) we completed the first phases of the architectural design study of an Automated Command and Control Information System (ACCIS); and we studied the evolution of the NATO Integrated Communications System from analogue to digital form.

During the year Logica made a significant contribution to the definition of tools for defence software engineering in Britain. We acted as consultants on a study for the Department of Industry and the Ministry of Defence for the design and definition of the high level computer language ADA and its Programming Support Environment (APSE). We also undertook a study for the MoD on the exploitation of local area networks to provide powerful and flexible facilities for software engineering.

We have continued in the development of war game facilities for the UK Royal Armament Research and Development Establishment (RARDE).

British Aerospace European Space Agency Iraq Ministry of Defence Marconi Avionics Limited
Marconi Space and Defence Systems UK Ministry of Defence NATO/SHAPE Plessey Defence Systems Limited
Royal Danish Air Force Vosper Thornycroft Westland Helicopters





Central and Local Government

This section includes all Logica's non-defence work for central and local government. In the UK a disappointingly small volume of work is contracted out, but during the year Logica undertook one of the largest co-operative projects for local government. In Australia we continue to undertake a number of important consulting assignments for government.

Logica undertook design and implementation of a computer-based central ambulance dispatching system for the densely populated Rotterdam region, where scheduling is required for some 300 missions per day by the area's 80 ambulances.

The Australian Bicentennial Authority, set up by the Australian government to plan and co-ordinate celebrations for the 200th anniversary of European settlement in Australia, retained Logica to prepare a strategy for its information needs.

Logica was commissioned by the New South Wales Department of Technical and Further Education to study its computing requirements and prepare an invitation to tender. This covered both hardware and systems software for a computer network in eight technical colleges and specialised processors for laboratory and engineering applications.

One of the largest local government co-operative ventures of its kind ever mounted in Europe resulted from UK legislation requiring all local authorities to manage and account for their direct works departments and labour organisations (DLO's) along commercial lines. On behalf of 155 local authorities responding to this new law, the Chartered Institute of Public Finance and Accountancy chose Logica to develop a functional specification for a DLO system and complete a companion study on implementation options.

As part of an efficiency drive the UK government sought to encourage further the use of micro-computers in government departments. The Central Computer and Telecommunications Agency commissioned Logica to design a methodology to enable administrative managers to identify applications that could be implemented quickly and bring rapid financial returns.

For a study team of the UK Department of Health and Social Security Logica contributed to the design of a strategy for the location of DHSS administrative tasks, by preparing a methodology for evaluating alternative options. The DHSS employs about 90,000 staff, located in 500 local and two central offices, to administer over 20 different social security benefits to more than 20 million people at any one time.

In collaboration with the UK Home Office's Police Scientific Development Branch and New Scotland Yard, Logica assisted in design and development of an advanced system for the automatic recognition of fingerprints.

A specialised real-time system for automatic speech recognition, developed and built by Logica for the UK Home Office, is able to recognise connected words in continuous speech, using advanced algorithms and novel hardware architecture. Logica also worked on direct voice input, using the system in a diverse range of applications.

For the Anglian Water Authority's central computer service Logica was employed to carry out a review of financial accounting facilities, to identify new requirements and to recommend the most suitable computing strategy for the years to 1985.

Anglian Water Authority Australian Bicentennial Authority Central Computer and Telecommunications Agency
CIPFA Chartered Institute of Public Finance and Accountancy EEC Forsvarets Rationaliserings Institut
Gemeentelijk Rekencentrum Leiden Gemeentelijk Rekencentrum Rotterdam Meteorological Office
National Water Sports Centre NSW Department of Technical and Further Education Rijkswaterstaat
Sociale Verzekeringsbank Statskontoret UK Home Office Waterloopkundig Laboratorium Delft

Banking, Finance

From the early 1970s, when the company designed the SWIFT network, Logica has had a specialist reputation in the design and implementation of real time and communications systems for the banks. Logica is now a world leader in this field. In both the USA and Sweden a large percentage of our operations are in this sector.

The Committee of London Clearing Bankers chose Logica as the software contractor for CHAPS (Clearing House Automated Payment System). Using British Telecom's Packet Switching Service, with a gateway computer in each settlement bank, CHAPS is designed to enable high value sterling payments to be exchanged between banks for same day settlement. Logica's contract was for definition of the functional requirements of the CHAPS gateway and its design, leading to implementation of the gateway software.

For Manufacturers Hanover Trust, Logica wrote the detailed functional specification of a system to automate the New York and London cable rooms of MHT's International Division. In addition, we assisted with the top-level design of the system and associated project planning.

An information systems strategy study for London stockbrokers, Phillips and Drew, was particularly concerned with the information requirements of dealers and the ways in which future developments in technology could be exploited to provide a variety of dealer support services.

Logica was commissioned by Brown Brothers Harriman & Co, the prestigious US banking and brokerage institution, to undertake studies related to the automation of cable room, order room and funds transfer operations.

Logica continued its work for the National Insurance and Guarantee Corporation (NIGC) in the UK on the detailed design of a motor insurance system.

Logica was selected against strong international competition to assist the Riyad Bank – one of the largest in Saudi Arabia – in the development of its nationwide computer network, providing full on-line branch accounting facilities to customers throughout the Kingdom.

For Vaerdipapircentralen, the new Danish automated bonds transfer system, Logica analysed and specified requirements for the network linking various computer systems at the centre to systems installed in Denmark's major financial institutions.

For the computer centre of the Association of Dutch Savings Banks, Logica studied the feasibility of installing a gateway between the Dutch national videotex service, Viditel, and the centre's IBM mainframes.

For the Swedish Commercial Bankers Association, Logica designed and developed software for a new 24 hour on-line public cash dispenser system to become fully operational during 1981.

For Lloyds Bank International, one of the world's largest international banks, Logica conducted a feasibility study and review of communications requirements involving the client's worldwide telecommunications network and the internal distribution systems in each branch. This was followed by preparation and evaluation of tenders for the supply of a message switching system for cable room automation.

American Express Bank of America Bank Mendes Gans Bankomat Centralen AB Barclays Bank Limited
Canadian Imperial Bank of Commerce Central Bank of Trinidad and Tobago Computer Centrum Bondsspaarbanken
Hill Samuel Australia Limited Lloyds Bank International Lloyd's of London Midland Bank
Nederlandsche Middenstandsbank PK-Banken Rabobank Svenska Handelsbanken TSB Trust

Energy

From only 4% of Logica's activity last year this sector has grown very rapidly to 15% this year. The main growth has been for the oil and gas industry in Europe and the Middle East. Excellent prospects exist for further development associated with major investment projects being undertaken by the industry.

Logica assisted British Petroleum in development of a networking strategy, definition of a detailed requirement specification for a bearer network and evaluation of suppliers' tenders.

NV Nederlandse Gasunie awarded Logica a supply contract for a data acquisition system to provide facilities for centralised monitoring and control of the Netherlands' entire trunk network of gas pipeline. One of the most advanced gas pipeline control systems in the world, the dual computer system has been designed to use Logica's Master Control (RPMC) software package.

Logica assisted British Nuclear Fuels Limited with procurement of an advanced computer aided design system for engineering.

To one of the most sophisticated computer users in the Middle East, the Abu Dhabi National Oil Company (ADNOC), Logica provided a range of services in database design, financial accounting systems, word processing, equipment selection and strategic planning for data communications.

On behalf of Rotterdam's Municipal Energy Authority, the City Computer Centre commissioned Logica to develop user requirement specifications for a new customer information system, designed to handle fully automated energy accounting for 350,000 clients.

For use in studies of the Groningen gas field, the Nederlandse Aardolie Maatschappij commissioned Logica to specify an information system allowing retrieval and processing of petrophysical, mechanical and production data from a large number of databases.

For the Electronics Corporation of India, Logica and Ferranti were retained to develop an oil supply monitoring and control system intended to become the standard throughout India. Based on Ferranti telemetry equipment interfaced to Logica's Master Control (RPMC) software package, the system is to be used initially for control of two off-shore oil production rigs and for tracking over 1250 km of oil pipeline.

Logica was commissioned by Shell Research to produce software for a computer system to supervise and sequence engine tests for oil evaluation, as an aid to improving the operation of engine test facilities at research centres in the UK and the Netherlands.

An interactive database system to improve tanker shipping intelligence concerning bulk oil movements was planned for Petroleus de Venezuela, using database information provided from the Lloyd's of London ship movement information system, previously developed by Logica.

Logica continued its substantial involvement in development of the operator environment for production platform monitoring systems for off-shore platforms in the Brent oilfield in the North Sea.

Abu Dhabi National Oil Company British National Oil Corporation British Nuclear Fuels Limited British Petroleum
Esso Gemeentelijk Energiebedrijf Rotterdam Koninklijke Shell Exploratie en Productie Laboratorium
Koninklijke Shell Laboratorium Amsterdam NV Nederlandse Gasunie Nederlandse Aardolie Maatschappij
Radiochemical Centre Shell International Shell (UK) Oil Limited UK Atomic Energy Authority

Manufacturing, Retailing and Transportation

For the manufacturing and retail industries, major new projects have been undertaken in Europe and Australia, with particular emphasis on process control and automating the handling of goods. Investment in transport automation has been at a low ebb in Europe but Logica is well placed for an upturn in this market.

In refurbishing a rubber mixing mill, Dunlop made fundamental changes to methods of storing constituents and preparing them for mixing. Logica contributed to the design of two integrated levels of a computer system: the first for immediate process control and mechanical handling for the mixing cycle; the second a production, planning and scheduling system which matches orders to stocks and constituents and prepares a work pattern on a shift basis.

Mannesmann-Demag Pty of Australia commissioned Logica to supply hardware and software systems to control the high rise area and associated conveyor system in a warehouse for a large retail organisation.

Logica initiated an exploration of the prospects for setting up two new agencies, the Wales Resource Centre and the Wales Investment Fund, under the auspices of the Wales Trade Union Congress, with the aim of generating interest in creating co-operatives as a community response to the pressure of unemployment. Response to efforts to promote co-operatives in Wales was gauged over a period of six months and appropriate structures recommended.

For Ricardo Engineering, a British design engineering company, Logica carried out a computer strategy study concerned with balancing the

computing demands from engineering, computer aided design and commercial applications.

A UK company, Babcock Jenkins Limited, commissioned Logica to audit software for computer controlled warehouse stacker cranes for use in two fully automated warehouses to be installed in the USSR. We were subsequently asked to take over the implementation of this software and the responsibility for its successful completion.

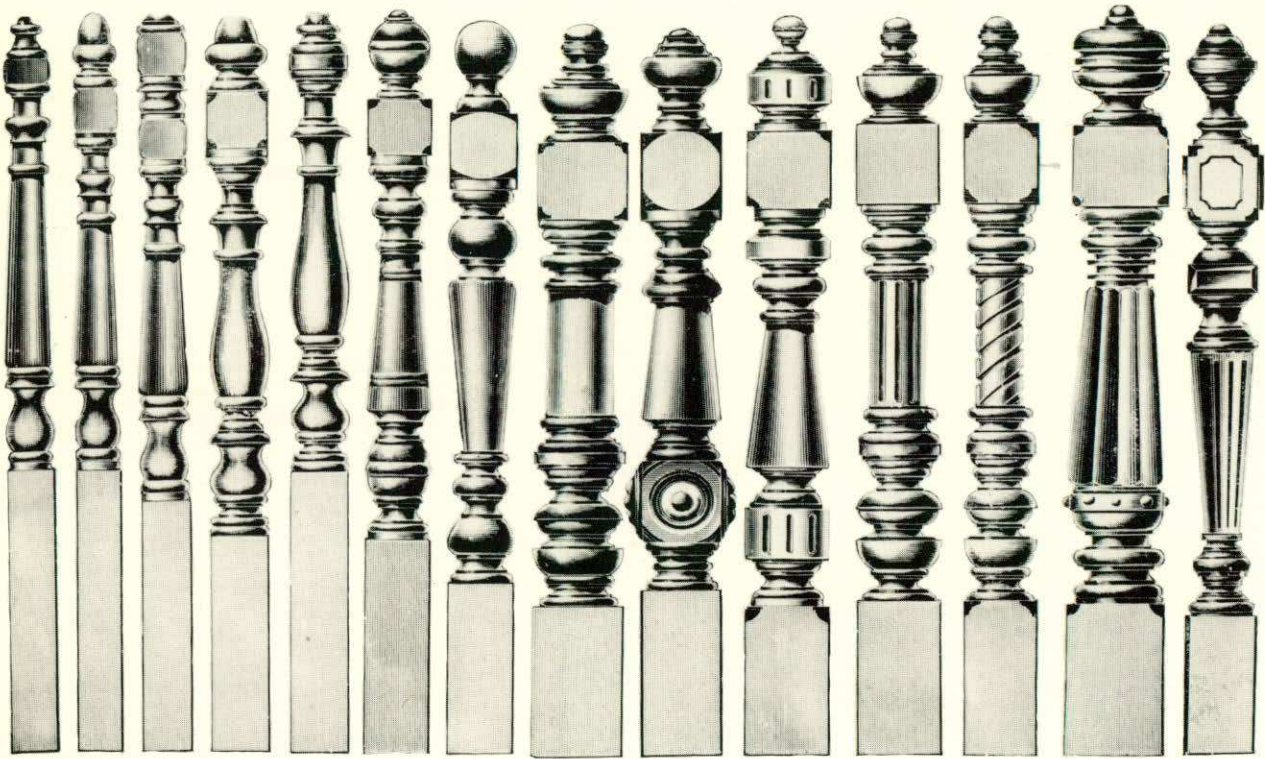
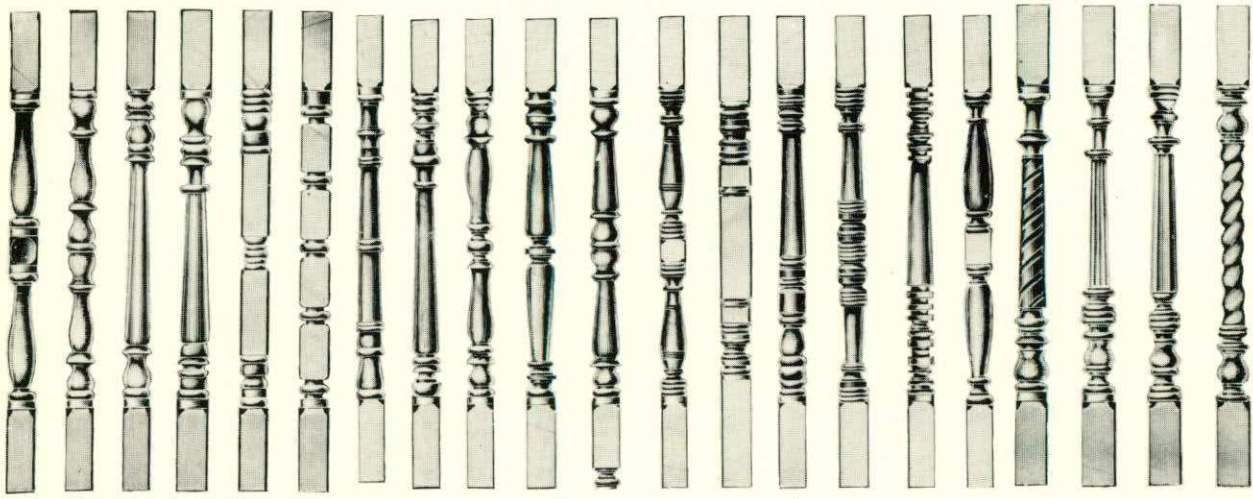
Estel-Hoogovens, the Dutch steel giant, commissioned Logica to develop the functional specification of a system to automate a heavy plate mill and contribute to its improved efficiency. Logica was also assigned a major role in implementation of the system.

Following a decision by the H. J. Heinz Company to acquire a new digital switching system for its UK headquarters, Logica undertook a review of the company's communications and office automation requirements.

For a major engineering contractor Logica undertook an information technology study reviewing the client's strategy for data processing, office automation, engineering design and information flow.

In completing the second phase of a major software development for Westinghouse for automatic fare collection on an underground railway system, Logica assisted with the development of communications architecture for integrating minicomputers with special purpose microprocessor-based devices for ticket issue and access control.

Akzo Bell Lines British Steel Corporation Cabot Corporation Ciba Geigy Dunlop Emba Techniek
EMI Estel-Hoogovens H.J. Heinz Company Limited Heron Corporation Interpharm
Koninklijke Luchtvaart Maatschappij Louis Dreyfus Marabou AB Masoneilan Limited
Philips Gloeilampen Fabrieken Philips Medical Systems Rank Xerox SmithKline Thorn Automation
Unilever Vegro Vroom en Dreesmann Westinghouse Whitbread & Co Limited



Computing, Communications and Electronics

Logica works extensively for the industry of which it is a part. In Europe the company is a leader in advising on product strategy and providing market forecasts. In the USA and Europe, Logica carries out product development for the manufacturers, particularly providing systems software.

For Executone, a US supplier of hospital communications systems, Logica developed a maintenance package for the Tempus system, providing facilities for nurse/patient communication, admission, discharge and transfer administration, staff registry and order processing.

Logica announced its Relational Database Management System, RAPPORT, as a software product. A key feature of RAPPORT is its portability, and the product had, by year end, been installed on more than 30 different ranges of computer, making it the most widely available DBMS. RAPPORT is being used by a wide variety of industrial and commercial organisations and government departments as well as some 20 universities.

Générale de Service Informatique (GSI), one of the largest computer bureaux in Europe, engaged Logica to carry out a joint training and capacity planning study in France for which the advanced mathematical computer planning model BEST/1* was used. GSI subsequently purchased the BEST/1* and CAPTURE/MVS* packages.

A Logica team assisted IRT Creed in development of their new generation microprocessor-based telex terminal. The project involved extensive use and support of UNIX†† systems development facilities.

Logica assisted Olivetti in Italy in development of network architecture.

AEG Telefunken Ampex DEC Fisher Controls Limited Hewlett Packard Honeywell Bull AB
Honeywell Information Systems Italia ICL Infonet Kent Process Control Limited Koning en Hartman
L.M. Ericsson AB Modcomp Perkin Elmer Corporation Philips Telecommunicatie Industrie Plessey
Rediffusion Computers Limited Ricoh Saab-Univac AB Sperry Gyroscope Standard Telephones and Cables

*Trade mark of BGS Systems Inc †Trade mark of Microsoft ††Trade mark of Bell Laboratories

During the year Logica made available a fully supported version of the UNIX†† timesharing system, recognised as offering major improvements in the productivity and control of the software development process, and invested in the support of the XENIX† system, the Microsoft enhancement of UNIX version 7.

For Centraal Beheer CEA, one of the largest Dutch computer service companies, Logica's communications strategy study investigated the alternatives of using the Dutch public packet switched service, DNI, or a private network and determining the most cost-effective method of interfacing different terminal types to host equipment based on IBM architecture.

In the UK, we developed for Standard Telephones and Cables Limited a special version of the Logica Intelligent Terminal. STC planned to integrate this into a system for remote testing of subscribers' telephone lines being developed for supply to British Telecom and other national PTTs.

For Datasab AB of Sweden, Logica developed full remote SNA/SDLC emulation software for a range of intelligent terminals.

Logica built on the Eurodata '79 study completed in the previous year by extending it to provide complete coverage of the European data communications equipment markets. At year end, in partnership with the Eurodata Foundation, Logica had provided market forecasts and analyses to more than 20 subscribers. These included most of the leading manufacturers of computing and communications equipment in Europe, the USA and Japan, major communications carriers, leading users and communications policy makers.

Telecommunications and Media

Work for the telecommunications and broadcasting authorities has expanded from 3% three years ago to 21% in the last year. For the PTTs, projects vary from marketing and policy consultancy to implementing message and telex switches. For the television companies an increasing range of systems products is being provided around the world.

Logica continued its major assignment for British Telecom, managing the planning and market trial of Prestel International. Following the success of the market trial, with some 350 terminals installed by 150 business organisations in the seven countries covered by the trial service, British Telecom decided to make Prestel a world service from the second half of 1981. Logica was commissioned to manage the overseas sales and marketing of this, the world's first international videotex business information and communication service.

For Ferranti and British Telecom, Logica completed a major message switching software development for BT's new generation of ILTMS (International Leased Telegraph Message Switch) services. ILTMS provides a common user service to the international business community using telegraph, telex and inter-computer communications.

For a non-European telecommunications authority, Logica reported on the prospects for introducing an ISDN (Integrated Services Digital Network) in Europe in the coming decade. Based on documentary research and discussions with PRTTs the study covered PRTTs' long range plans, the methods proposed for transition to an ISDN and the technical and socio-economic problems of realising an ISDN.

Logica worked with British Telecom to define a communications device, codenamed Albert, to be

used as a gateway for communications networks.

A study for Telecom Australia to forecast demand for Telecom's AUSTPAC (packet switching) and DDS (digital circuit) data networks, planned for introduction in 1982, was based on user choice methodology developed by Logica for Eurodata '79. The forecasts look ahead to 1987.

A CONTEXT system installed at ORF, the Austrian broadcasting authority, provides a full teletext service plus comprehensive facilities for sub-titling foreign language broadcasts.

British Telecom commissioned Logica to study the potential demand from UK users for a Europe-wide satellite service.

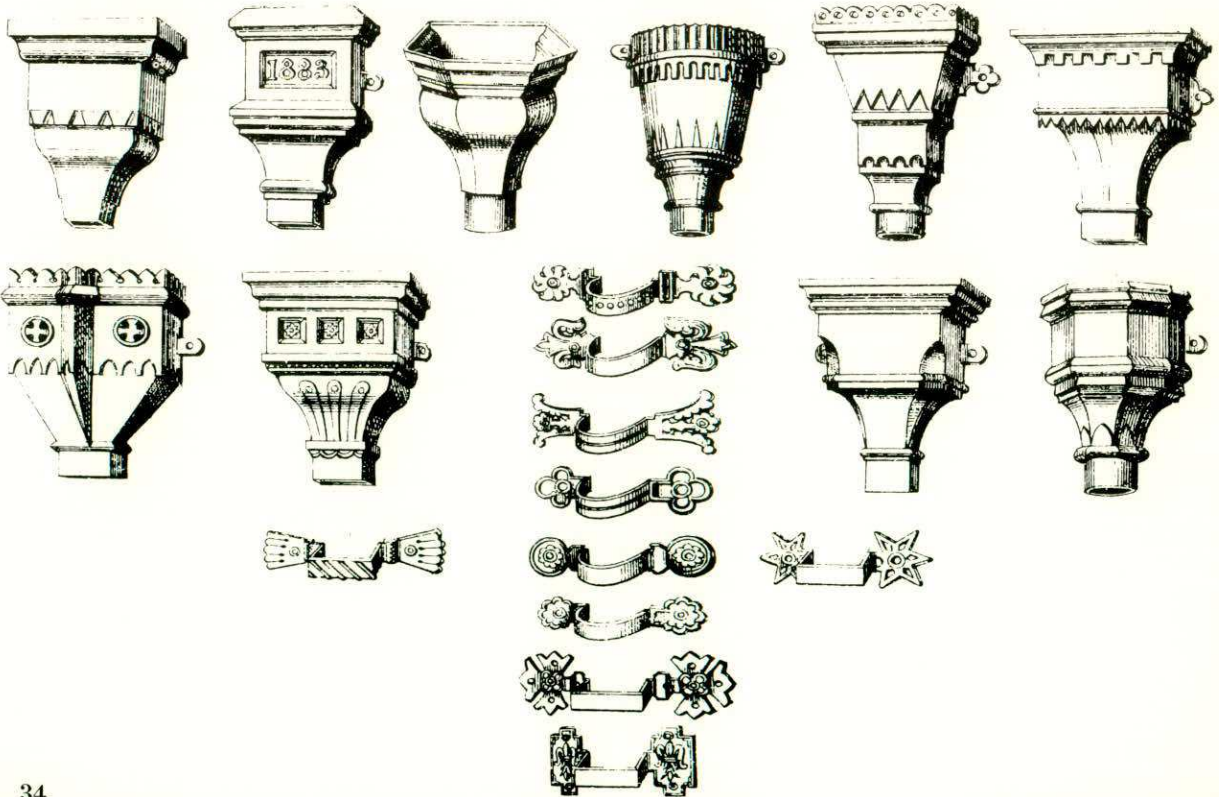
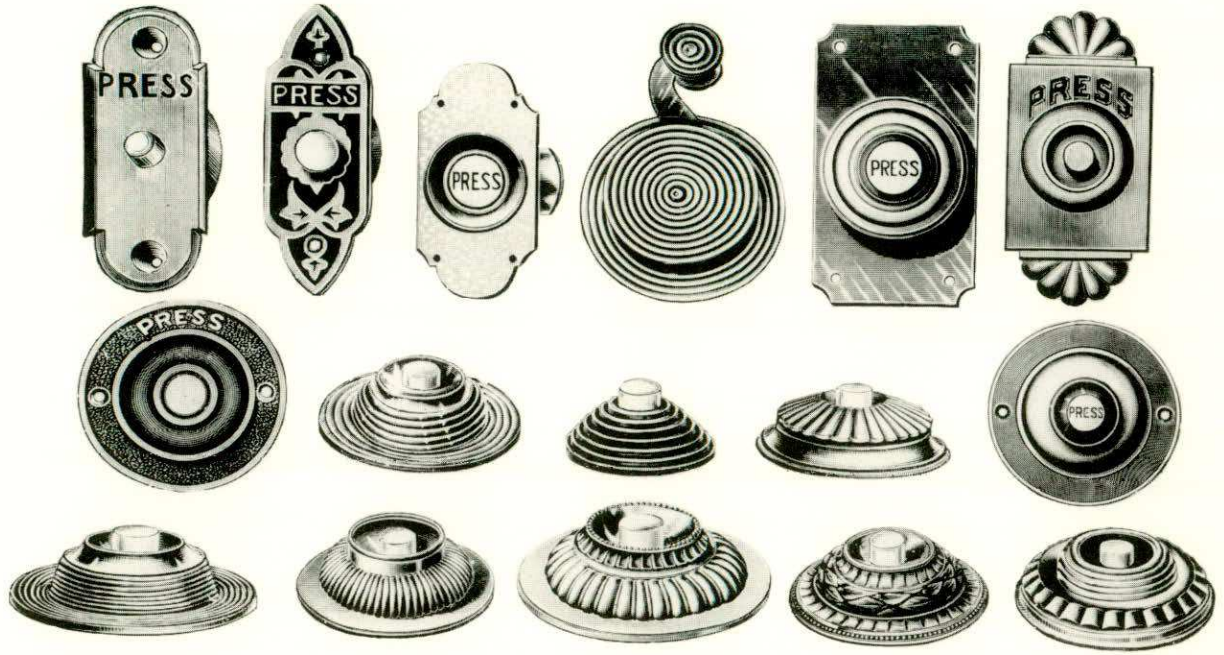
A CONTEXT system installed for Field Electronic Publishing transmits teletext, including advertising, over station WFLD in Chicago and is the first commercial teletext service in operation in the USA.

Logica provided extensive software support to both Tekade of Nurnberg and Philips Telecommunicatie of Hilversum in developing new facilities for the multi-microprocessor based DSX-40 message switching system, to be supplied to PRTTs and their clients.

For the fourth television channel, due to come into service in Britain in November 1982, Logica supplied units to monitor and control the performance of all new electronic equipment being installed at 58 transmitter sites throughout the UK. The contract was awarded by the Independent Broadcasting Authority.

BBC British Teleconsult British Telecom Economist Field Enterprises Inc Finnish PTT Hobson Press
IBA Insight Media Intermediair Osterreichischer Rundfunk Reuters Limited Staatsbedrijf der PTT
Telecom Australia





Review of the Year

This was a year of significant development for Logica VTS Limited. Our turnover exceeded £5 million and the number of staff employed exceeded 100. During the year new premises were taken at Swindon, Wiltshire, where we commissioned a new manufacturing operation.

The result of our main development activity last year – the Nexos 2200 word processing system – was launched in the UK towards the end of 1980 and first customer shipments took place in January 1981. It was very well received by the early users and attracted favourable comment on its physical design, its user friendliness (ease of use) and the range of functions provided by the software.

Nexos received large multiple system orders from a number of major manufacturing and private sector organisations. The system was also very well received at the Hanover Fair in April 1980 and orders were taken for several systems at the Fair. Towards the end of the year Nexos had organised distribution arrangements in most western European countries. We expect that a substantial proportion of next year's production will be destined for continental Europe.

During the year local area networking (LAN) became a major topic of interest in our industry, with both users and suppliers. This technology offers very high speed digital communications with low error rates within a building or site. In various forms, it is likely to be at the centre of future developments in office systems and distributed computing.

We have been involved in this technology for over two years, and have had a LAN based system

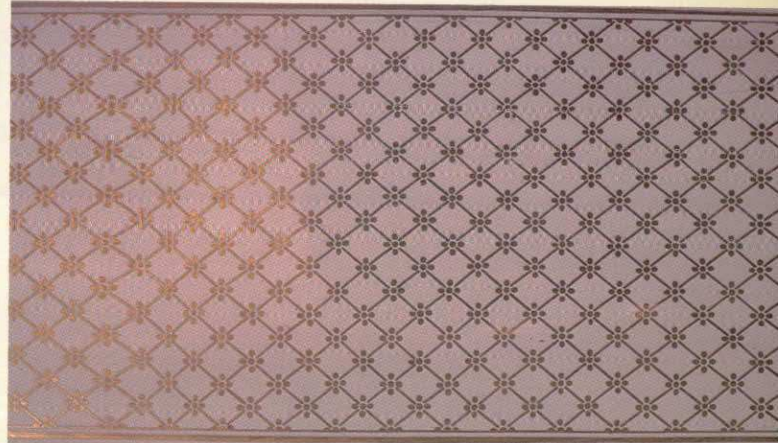
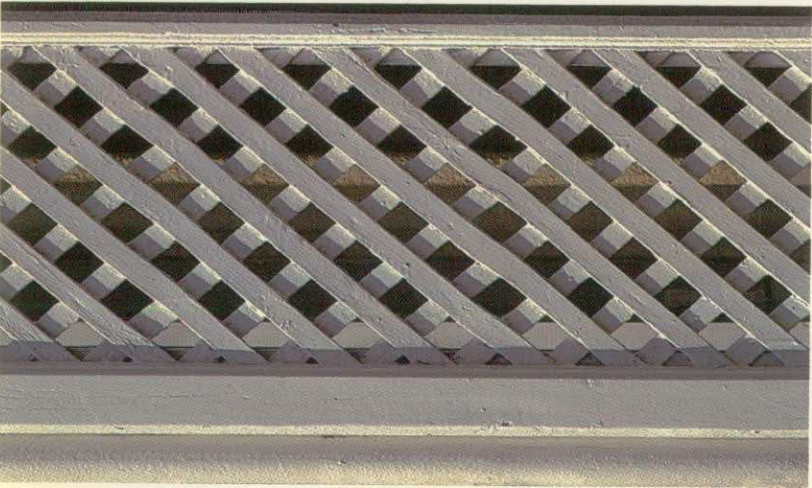
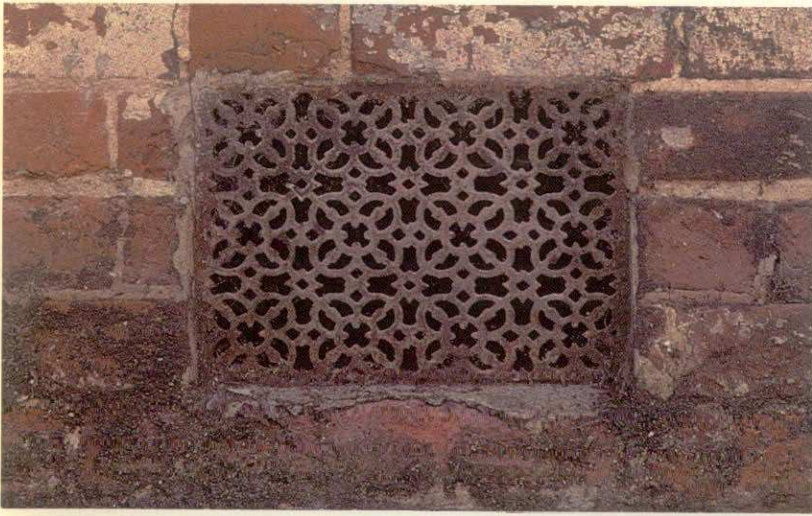
working in full operational use (seven days a week, 24 hours a day) at our London office for over a year. The availability of this system has made a very positive impact on the productivity of our development staff.

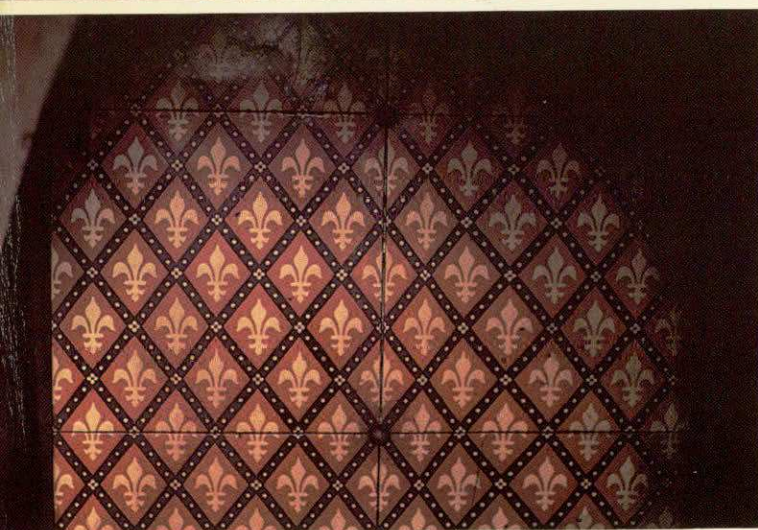
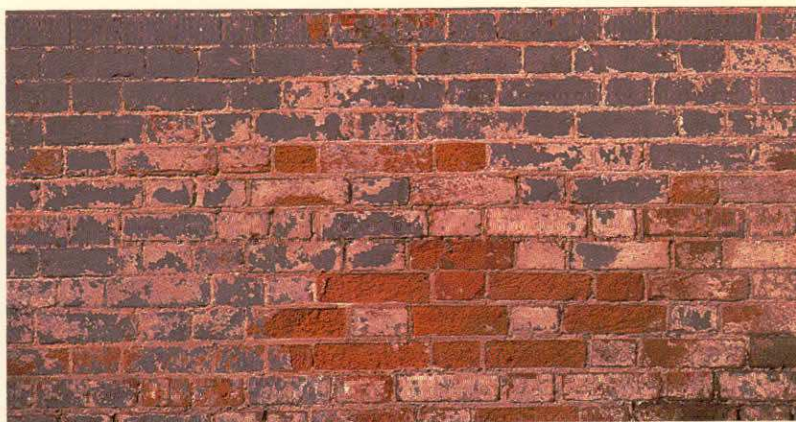
Because of our considerable involvement with LAN technology we were able to launch in February 1981, ahead of several competitive technologies, our local area network product range, POLYNET. While LAN technology is available within certain suppliers' systems today, POLYNET represents one of the first open networks to which the systems and intelligent terminals from a number of different suppliers can be connected. There has been considerable press and potential customer interest in this product since its launch, and initial orders have included one from the UK Science and Engineering Research Council (SERC) for ten network systems which will be deployed in universities and research laboratories engaged in the Distributed Computing Programme sponsored by the SERC. Further orders have been received in the UK from a Ministry of Defence systems supplier and from organisations involved in Project UNIVERSE, an experiment to link up LAN based systems via the European Space Agency's OTS satellite.

Financial Review

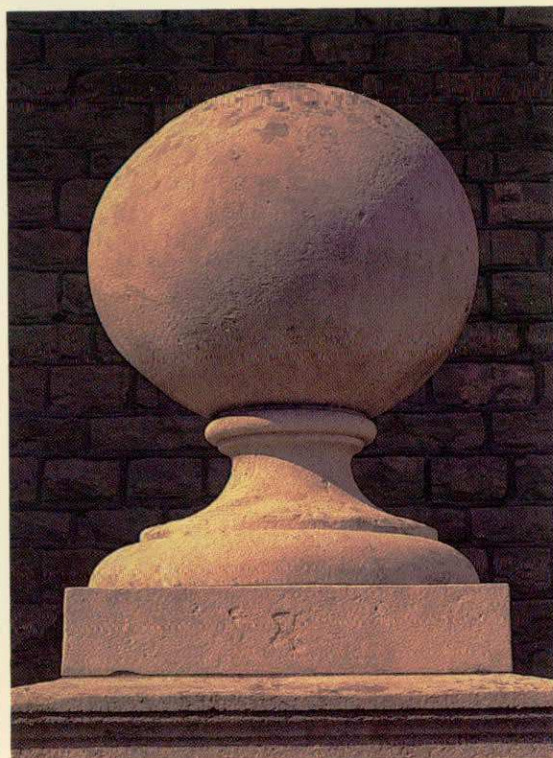
Logica VTS Limited	1981	1980
Summary Profit and Loss Account for the year ended 30 June 1981	£'000	£'000
Charges Billed	5,185	3,693
Change in Work in Progress during year	260	81
	<u>5,445</u>	<u>3,774</u>
<i>Less</i>		
Salaries and Operating Expenses	5,085	3,537
	<u>360</u>	<u>237</u>
Trading Profit		
<i>Less</i>		
Unrealised Loss on Foreign Exchange	2	0
	<u>358</u>	<u>237</u>
Profit before Tax		
<i>Less</i>		
Taxation Payable	0	0
Taxation Deferred	0	0
	<u>0</u>	<u>0</u>
Net Profit after Taxation	£358	£237

Logica VTS Limited	1981	1980
Balance Sheet at 30 June 1981	£'000	£'000
Funds Employed		
Fixed Assets at cost less depreciation	478	513
Current Assets		
Stock and Work in Progress	996	590
Debtors	1,589	1,125
Bank Balances	191	303
	<hr/>	<hr/>
	2,776	2,018
<i>Less</i>		
Current Liabilities		
Creditors	1,389	1,275
Overdrafts	0	500
	<hr/>	<hr/>
Net Current Assets	1,387	243
	<hr/>	<hr/>
	1,865	756
Deferred Liabilities	773	22
	<hr/>	<hr/>
	£1,092	£734
Financed by		
Share Capital and Reserves		
Share Capital	4	4
Share Premium	499	499
Revaluation Adjustment	25	25
Retained Earnings	564	206
	<hr/>	<hr/>
	£1,092	£734





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Colham Park, Essex, Surrey.

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To Her Majesty,

MANUFACTURERS OF STOVES FOR WARMING LARGE ROOMS, HALLS & CHURCHES.

Warm and Shower Baths, on a simple and approved plan

ROOMS WARMED BY STEAM OR WATER, ON THE MOST ECONOMICAL PRINCIPLES.

1878			
March 30	1/4 Range with Oven on left bright mountings spit racks winding cheeks trivet &c.	40	
	1 wrought iron riveted Boiler.		
	2 Boiler Lumps.	16	
	3 Fire Lumps for Oven and Hot Lead.	12	
	Iron Linings Hot Doors & Dampers for Fire Place.	5	
	1 Raker & Under.	13	
	An outside movement Smoke Jack with 2 dangles with traversing plates, strong wheels dangle guides &c.	30	
	Alterring & cleaning Spits.	14	
	1 Hot Plate with Boiler under ditto strong furnace bars heat bar, plumb & hitting &c.	30	
	1 wrought iron canopy and air Flue.	10	
	2 new hooks to Charcoal Stove.	4	
	An 80 gallon Hot water cistern.	12	
	Cast metal Chandeliers.	2	2
	Iron cistern Ball cock & wrought iron Brackets.	2	
	4 ft of twin galvanized iron Pipe fittings for supply to hot water cistern.	1	4
	1/2 lb of 1/4" ...	1	11