

APPENDICES [copied from the main report]

	doc page	pdf page
1. Statistics about Haringey	61	2
2. The Integrated Information System for Local Government (diagram)	75	15
3. Outline Proposals for Nucleus Applications	77	17
4. Outline Proposals for Extension Applications	83	23
5. Summary File Descriptions for Nucleus Data Bank	89	29
6. Notes on Computer Manufacturers	113	53

1.APPENDIX 1: STATISTICS ABOUT HARINGEY

1. THE BOROUGH
2. EXPENDITURE
3. RESOURCES
4. VOLUME OF ACTIVITIES
 - 4.1 Social Services
 - 4.2 Technical
 - 4.3 Education
 - 4.4 Finance and Administration
 - 4.5 Amenity Services

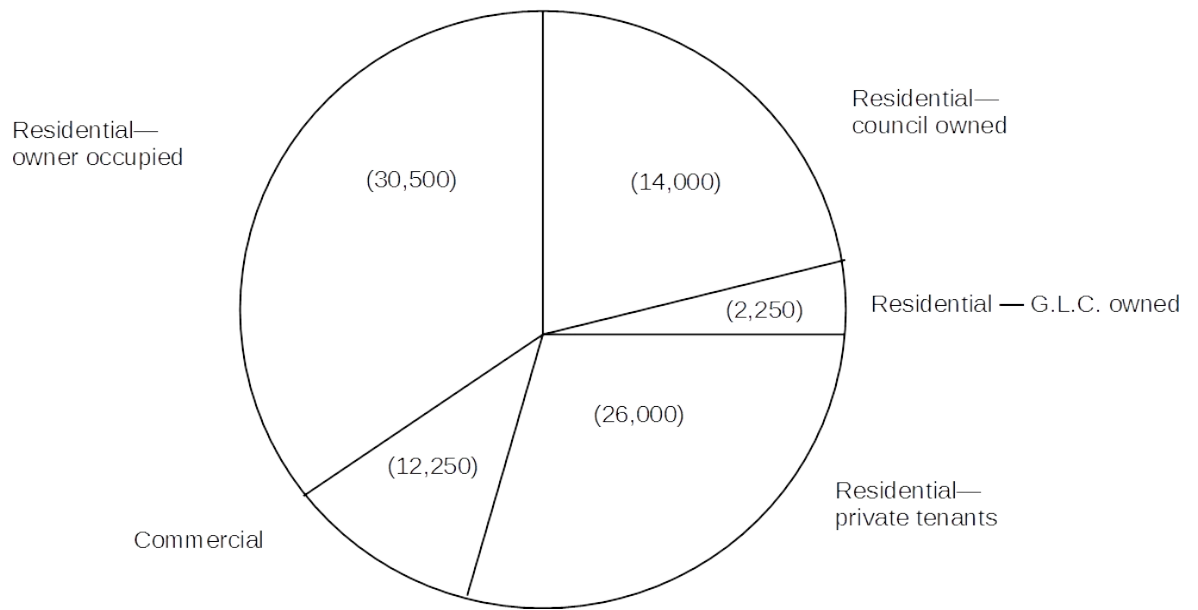
All statistics relating to sterling amounts are based on the estimates for 1968/69.

Quantitative figures are for one year.

1 The Borough			
1.1	AREA OF BOROUGH	7,491 acres	
1.2	ELECTORAL DIVISIONS		
1.	Number of parliamentary constituencies	3	
2.	Number of electoral wards	20	
1.3	RATING		
1.	Rateable value		
2.	Penny rate product	£13,658,000	
3.	Summary of general rate estimate:	£54,600	d.
	Council services	s.	3.37
		19	
		s.	d.
	LESS Grants	8	3.21
	Appropriation		10.32
		9	1.53
	Required for Council services	10	1.84
	Required for precepting authorities	3	2.16
	Total rate requirement	13	4.00
4.	Rating hereditaments	85,000	
5.	Rating accounts	50,000	
1.4	ROADS		
1.	Number of roads	1,350	
2.	Classification		
	Trunk	4.33 miles	
	Metropolitan	4.65 miles	
	Principal	12.41 miles	
	Class I	1.23 miles	
	Class II	13.04 miles	
	Class III	13.00 miles	
	Other	153.00 miles (approx.)	
	Total	201.66 miles (approx.)	

1.5 PROPERTY

1. Analysis of use of hereditaments

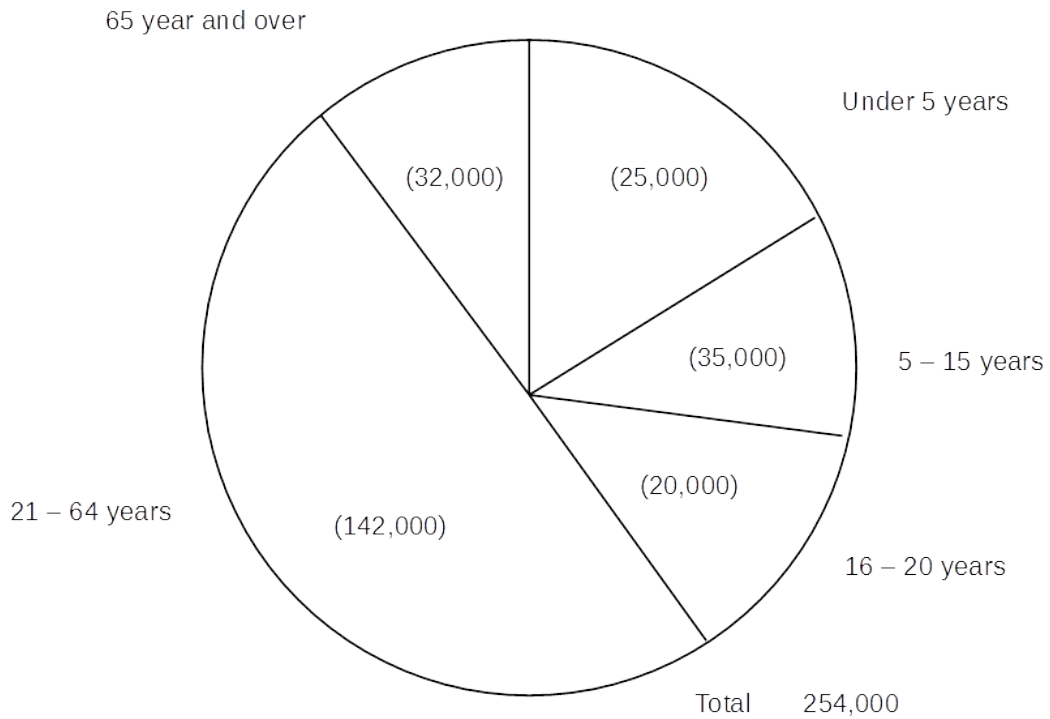


Commercial:	Registered Food premises	1,039
	Offices, Shops & Railway	
	Premises registrations:	
	- offices	500
	- retail shops	1,270
	- others	234
	Other premises	9,207

2.	Council owned premises (non-residential)	500
	rented out	

1.6 POPULATION

1. Distribution by ages:



2. Births

1. Number Registered	5,337
2. Birth rate per 1,000 estimated population (Registrar General's comparability factor - Haringey: National average 0.92:1)	21.000

3. Deaths

1. Number Registered	2,805
2. Birth rate per 1,000 estimated population (Registrar General's comparability factor - Haringey: National average 0.97:1)	11.04

4. Housing waiting list 7,300

5. 'Immigrant' grant £71,000

2. Expenditure

2.1 REVENUE

1. Net expenditure on services provided by Haringey

	£
Baths	118,200
Children's	324,420
Cleansing & Transport	438,750
Establishment	136,390
Finance	199,410
General Purposes	264,040
Health	787,430
Highways & Public Works	945,550
Housing	649,850
Libraries & Museum	382,090
Parks	244,830
Town Planning & Development	250,190
Welfare	396,890
Others (Catering, Cemeteries, Civil Defence, Entertainments, Accident Prevention, Contingencies)	<u>57,630</u>
	5,195,670
Education	<u>7,436,660</u>
Total	<u>12,632,330</u>

2. Gross expenditure on rate fund services

	Non-Education	Education	Total
	£	£	£
General salaries	2,402,310	628,250	3,030,560
Teachers' salaries	-	3,750,250	3,750,250
Wages	1,172,270	616,070	1,788,340
Repair & maintenance of buildings	161,660	307,930	469,590
Fuel, light, cleaning materials and water	232,950	225,040	457,990
Establishment and office expenses	165,750	148,200	313,950
Rent and rates	147,610	197,970	345,580
Supplies and services	336,600	749,220	1,085,820
Transport and travel allowances	187,080	25,620	212,700
Debt charges	3,598,570	451,090	4,049,660
Housing repairs account	387,090	-	387,090
Trunk and metropolitan roads	390,690	-	390,690
Other roads	183,690	-	183,690
Aids to students	-	753,090	753,090
Share of education national pools	-	639,430	639,430
Agency services	270,710	918,780	1,189,490
Other expenses	343,410	235,200	578,610
Total	9,980,390	9,646,140	19,626,530

2.2 CAPITAL

1. Estimated cost of schemes in progress together with schemes authorised for 1968/69.

Service	1968/69 Estimate	Total Estimate
	£	£
Cleansing and Transport	61,300	769,650
Education	1,139,990	5,590,960
Finance (including housing advances)	2,079,150	3,821,680
Health	174,390	773,810
Highways, Public Works and Estates	463,805	1,657,840
Housing	9,053,115	39,225,570
Libraries, Museum and Arts	5,420	428,255
Parks	6,005	295,420
Town Planning and Development	285,240	3,945,270
Welfare	110,900	314,630
Others	48,550	202,570

Total

13,427,865

57,025,655

2. Total capital debt

£44,000,000

3. Resources

3.1 STAFF

Department	Officers	Employees
Town Clerk's	199	-
Architect's	111	-
Baths	26	106
Building works	85	510
Catering	13	100
Cemeteries & Crematorium	9	45
Children's	125	40
Cleansing & Transport	30	380
Engineer & Surveyor's	183	400
Entertainments	7	6
Health	436	300
Housing	84	19
Libraries	170	55
Parks	26	303
Town Planning	45	-
Treasurer's	251	-
Welfare	81	200
	1,881	2,664
Education*	3,400	1,800
	5,281	4464
*Teachers—Full and regular part-time		1,800
—Supply and sessional		1,000
Officers		600

3.2 STORES

1. Number of commodities	5,100
2. Value of commodities	£75,000

3.3 NUMBER OF VEHICLES

213

3.4 STREET LIGHTING INSTALLATIONS

1. Street Lights	10,600
2. Beacons, bollards, traffic signs	1,100
3. Junctions with lights	34
4. Pedestrian crossings controlled by lights	19

3.5 COMPUTER EQUIPMENT

1. Haringey shares, with two other London Boroughs, the use of a LEO III computer The computer configuration is:-	6 magnetic tape decks 16,384 words of store (1 word = 5 numeric characters) 2 printers 2 paper tape readers
2. Weekly perforating load	490,000 characters

3.6 BUILDING, ETC.

	1 civic centre 3 municipal offices
Town Clerk's	5 offices

Baths	3 indoor pools 3 lidos 4 laundries 115 private baths
Building Works	3 depots
Catering	1 civic restaurant 3 staff canteens (situated in civic centre and 2 municipal offices) 1 banqueting suite (situated in municipal office) 2 college refectories (situated in colleges)
Cemeteries & Crematorium	2 cemeteries 1 crematorium
Children's	1 office 2 nurseries 9 homes 1 hostel
Cleansing & Transport	8 depots
Education	6 offices 72 primary schools 15 secondary schools 3 special schools 3 nursery schools 2 colleges
Engineer & Surveyor's	7 depots
Entertainments	1 office
Health	4 day nurseries 1 sheltered workshop 19 clinics 1 mortuary 3 mental health establishments 1 mother and baby home
Housing	2 offices 3 estate offices 1 hostel 14,000 dwellings 2,100 garages
Libraries	1 office and museum 11 libraries
Parks	1 office 3 nurseries 1 workshop 25 parks 2 woods 13 children's playgrounds 47 sports pitches 2 putting greens 9 bowling greens 1 athletic track 1 model traffic area 107 tennis courts 1,700 allotments
Welfare	10 residential homes 1 hostel 1 work centre

4 Volume of Activities

4.1 SOCIAL SERVICES

1.	Environmental Health		
	1. Public Health Inspectorate inspections (all purposes)	35,504	
	2. Statutory notices served	423	
	3. Clearance areas—represented in year	34	
	—families in Clearance Areas	559	
	—houses in Clearance Areas	414	
2.	Personal health		
	1. Vaccination and Immunisation—completed primary course	9,356	
	—reinforcing dose	8,201	
	—smallpox	2,086	
	2. Observation register	1,000	
	3. Care of mothers and young children:		
	Session	No.	Attendances
	Antenatal	965	12,445
	Cervical cytology	166	935
	Mothercraft & relaxation	443	2,603
	Infant welfare	1,834	71,734
	Toddlers' clinic	472	7,073
	Priority dental treatment	473	3,744
	4. Midwifery —Home deliveries		706
	—Home assessments		803
	5. Health visiting—visits		46,591
	—Health Visitor to population ratio		1:9000
	6. Home Nursing—cases		2,859
	—visit		84,618
	7. Domestic help service cases		2,774
	8. Mental Health—patients referred		750
	—under Local Authority care		442
	—visits		7,924
3.	School health		
	1. Pupils inspected		13,958
	2. Pupils attending special clinics		3,170
	3. Dental—inspections		24,728
	—attendances for treatment		26,491
	4. B.C.G. vaccinations		1,958
4.	Welfare		
	1. Admission to residential accommodation		921
	2. Short stay admissions		79
	3. Residents in council owned Homes		730
	4. Residents in voluntary homes for whom Council financially responsible		132
	5. Handicapped register		1,000
	6. Additions during years		197
	7. Blind/Partially sighted register		591
	8. Additions during year		63
	9. Homeless families—applications for help		283
	—admissions to hostel		32
	—admissions to secondary welfare unit		16
	10. Meals-on-Wheels—dinners served		34,000

5.	Children's	
	1. In care in council establishments	500
	2. Admissions per month	42
	3. Discharges per month	38
	4. Supervised for other local authorities during year	44
	5. Under voluntary supervision	70
	6. Adoption—applications from adopters	110
	—babies placed	24
	—Guardian ad litem cases	30
	7. Haringey juveniles appearing in court	600
6.	Housing	
	1. Letting during year	1,000
	2. Collection cycle	Fortnightly
	3. Rent rebate assessments	1,200
	4. Notices to quit served	120
	5. Repair & maintenance requisitions	30,000
	6. Properties purchased	500
	7. Properties built	1,000
	8. Additions to waiting list	1,200

4.2 TECHNICAL

1.	Planning applications	1,000
2.	Building control certificates	1,100
3.	Inspections for improvement grants	285
4.	Footway repairs	2,400
5.	Trench re-instatement	10,000
6.	Gully cleansing	24,128
7.	Vehicles tested (M.O.T.)	5,700
8.	Rechargeable works	1,750
9.	Capital projects in hand—Housing	56
	—Roads	27
	—other	160
10.	Special trade refuse collections	2,000
11.	Container hire agreements	500
12.	Abandoned vehicles—removal inspections	1,500
13.	Direct labour repair and maintenance jobs	50,000
14.	Stores—Receipts	3,700
	—Issues	120,000

4.3 EDUCATION

1.	Pupils	34,400
2.	Assessments for grants and aids	4,270
3.	Children taking school meals	24,000
4.	Child Guidance cases	650
5.	Students at Borough colleges	7,500
6.	Students at Adult Education Centres	9,900
7.	Students with major awards	1,730
B.	Youth Employment Service—interviews	7,000
	—unemployment benefit payments	1,800
9.	Affiliated youth organisations	135
10.	Repair and maintenance requisitions	6,600

4.4 FINANCE AND ADMINISTRATION

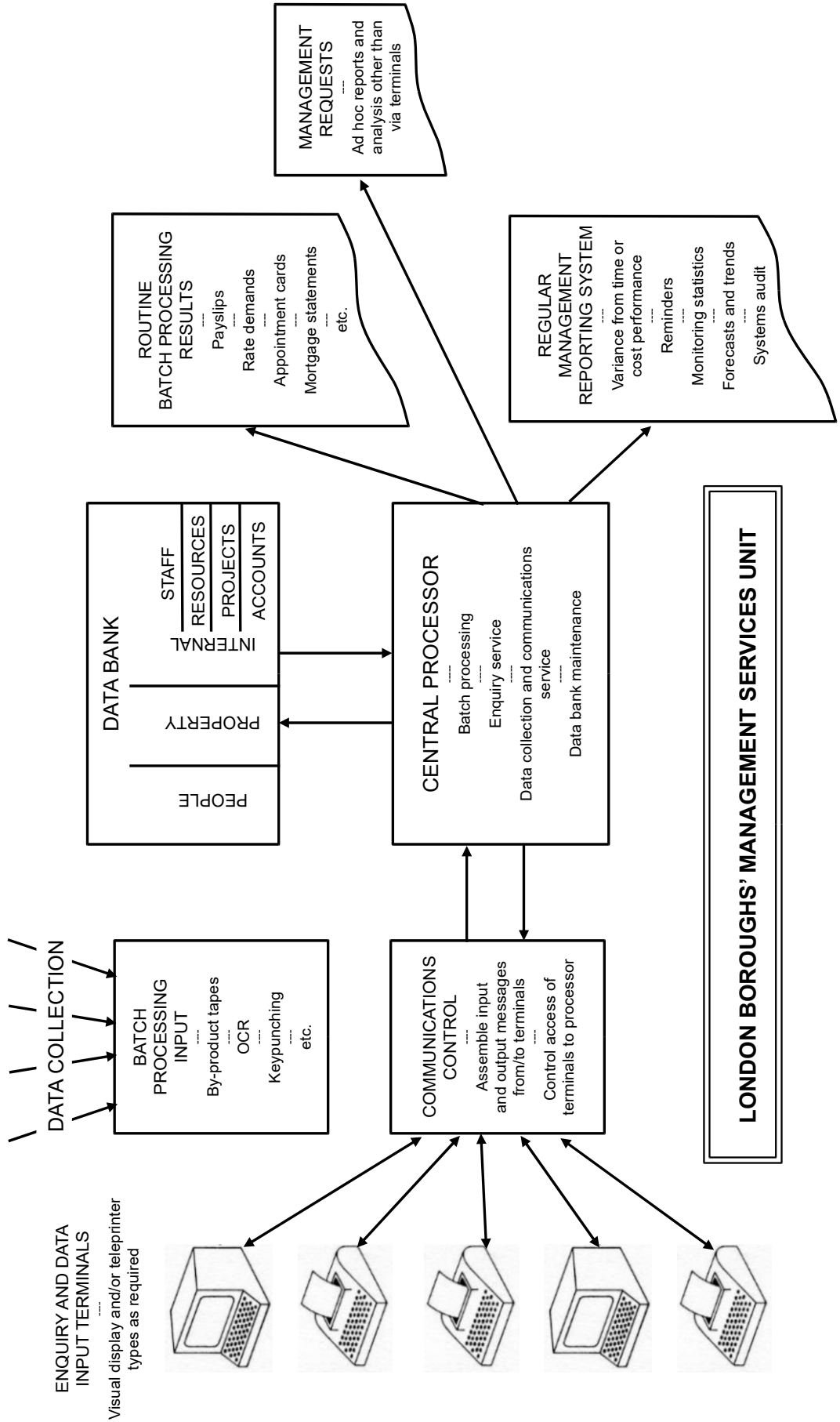
1.	Rate collection expenses	£130,400
2.	Demand notes issued in April (Rates are demanded annually)	49,000
3.	Reminders and finals sent	16,000
4.	Summonses served	4,000
5.	Ratepayers frequency of payment—annual	7,500
	—½ yearly	22,000
	—quarterly	4,500
	—monthly	5,000
	—others	11,000
6.	Mortgagors	5,000
7.	Mortgage quota	£1,297,000
8.	Accounts issued	37,000
9.	No. of receipts—bank credits	41,600
	—post	68,500
	—payments to cashiers	171,500
10.	Assisted car purchase loans	103
11.	Income assessments—Rates (½ yearly)	5,973
	—Education	6,215
	—Social services	5,734
12.	Orders placed	
	Department	Number
	Town Clerk's	1,881
	Architect's	2,014
	Baths	742
	Building Works	3,252
	Catering	3,408
	Cemeteries and Crematorium	508
	Children's	4,340
	Cleansing and Transport	3,684
	Education	49,084
	Engineer and Surveyor's	5,015
	Entertainments	326
	Health	7,012
	Housing	2,634
	Libraries	1,300
	Parks	1,015
	Town Planning	232
	Treasurer's	504
	Welfare	4,724
	Total	<u>91,675</u>
13.	Invoices received	170,000
14.	Payments made	84,000
15.	Regular suppliers	6,000
16.	Contracts	300
17.	Annual orders	400
18.	Payroll payments (including Pensioners—Credit Transfers	62,500
	—Cash	263,500
	—Cheques	15,000
19.	Accountancy codes	7,000
20.	Standing job codes	1,000
21.	Individually costed jobs	5,000
22.	Number of local land charges searches	6,350
23.	Number of licences and registrations	1,600
24.	Public Control inspections	5,000
25.	Rent adjudication cases	700
26.	Electors—Total	174,000
	—'B' list	20,000
	—'C' list	22,750

4.5 AMENITY SERVICES

1.	Baths	
	1. Admissions to pools	467,484
	2. Admissions to laundries	146,951
	3. Admissions to private baths	178,349
2.	Catering—income from sales	£123,000
3.	Cemeteries and Crematorium	
	1. Number of interments	610
	2. Number of cremations	4,766
4.	Entertainments—shows for aged, handicapped and sick	240
5.	Libraries	
	1. Book issues	2,400,000
	2. Gramophone record and music issues	64,000
	3. Book/record reservations	62,400
	4. Overdue book/record reminders	114,400
	5. Books purchased	60,000

APPENDIX 2

THE INTEGRATED INFORMATION SYSTEM FOR LOCAL GOVERNMENT



APPENDIX 3: OUTLINE PROPOSALS FOR NUCLEUS APPLICATIONS

1. STANDARD FACILITIES
2. RATE ACCOUNTING
3. MORTGAGORS AND MISCELLANEOUS DEBTORS
4. RENT ACCOUNTING
5. INCOME ASSESSMENT
6. STAFF RECORDS AND PAYROLL
7. CREDITORS AND STOCK
8. JOB PROGRESSING AND COSTING - REVENUE WORKS
9. ACCOUNTING AND BUDGETARY CONTROL

APPENDIX 3: OUTLINE PROPOSALS FOR NUCLEUS APPLICATIONS

In this report it is not practicable to go beyond an outline of the main objectives in the design of the new computer systems. Working papers are being produced on each application area, initially for discussion at Haringey. Modified versions of these papers will subsequently be presented to working parties of representatives of all Boroughs deciding to become partners in the project.

1. Standard Facilities

As a result of the need to apply common routines to all files, a number of utility programs will be written as part of the Nucleus. These programs will present users with the following facilities:-

- (a) Interrogation, amendment and insertion of individual records via terminals.
- (b) Scanning and analysis of files.
- (c) Provision of 'standing orders' for information on specified subjects to be circulated to specified offices.

It is regarded as of the highest importance that the records which will be presented as output at terminals shall as far as possible be in plain language without codings, so that they may be understood by anyone making a proper enquiry.

In addition to the utility programs mentioned above which will be available to users, there will be others to deal with matters such as the automatic setting and re-setting of cross-references implied by data notified, and the automatic logging and analysis of terminal transactions for audit of the online system.

2. Rate Accounting

The computer will as now produce the essential documents e.g. demands and schedules. Receipts will initially be posted daily from automatically produced tapes but in due course may be entered as they occur. Updated accounts will be available for inspection via terminals. Most amendments will be entered via terminals, and any resulting re-calculations displayed for immediate action. Access to the components of schedules will become straightforward.

Generally, the standard weekly run, the accounts list and the rate charge book and its supplement will no longer be needed. The calculation of rebates will be integrated with the income assessment programs. Facilities for recovery procedures will be more flexible than at present, based on standard file scanning routines; for example, two or more recovery cycles may be handled concurrently.

Owing to the cross-referencing of the general files of property and persons, it will be possible to locate ratepayers' records by either name or address as well as by an account number. As a result of the proposed pooling of information about people and property the Rates Office will derive some benefit, but on balance is likely to contribute very considerably to the

interests of other departments. Thus whilst this is primarily a financial application, and one which it is desirable to take on early to release existing equipment, nevertheless it will make available a major source of information of general utility throughout the range of services of the Council.

3. Mortgagors and Miscellaneous Debtors

The main emphasis of the proposals for miscellaneous income is to take advantage of system integration in order to permit the computer to calculate and print as many bills as possible.

It is felt that computer-originated accounts are practicable in the following cases:-

- Mortgage repayments
- Social service charges (via income assessments)
- Refuse collection charges
- Trench reinstatement (via job costing)
- Rechargeable works (via job costing)
- Ground rents and wayleaves (via property files)
- Refuse container hire (via property files)
- Allotment rents
- Hall lettings

in addition the provision of a surname index to all debtors, a property index to mortgagors, and flexible control over recovery procedures will all be of considerable assistance.

It is suggested that data terminals should be used for submitting new accounts and mortgage completions, and for consulting account balances and redemption values. A weekly run will be needed to raise debits and produce bills.

These proposals should relieve a number of departments of the need for submitting data specially for the preparation of accounts.

4. Rent Accounting

Rent accounting will be based upon a subsection of the file of property records (including garages) and will make provision for the accounts of current and previous tenants. The rent application is intended to encompass all rate accounting in respect of council dwellings.

Owing to the cross-referencing of the general files of property and persons, it will be possible to locate tenants' records by either their name or address, as well as by any account number which may be used

The computer will also be used to maintain records of families in the housing "pool" (i.e. those families approved by committee for re-housing) with a view to facilitating the administrative and accounting aspects of letting. Information on the progress of repair work will also be available. Lettings and other record amendments will be submitted via a terminal, the resulting calculations being available for amending rent cards

The computer will carry out annual rent and rate calculations and produce the rent cards or equivalent documents. It will also produce lists of council housing for

distribution, and will circulate lettings and transfer information to interested parties by arrangement.

A regular run will be required for the purpose of raising debit, and printing a voids list and management reports. Receipts may be posted daily or weekly, and flexible procedures will be available for the control of arrears and recovery, including the production of standard letters.

5. Income Assessment

It is proposed to use the computer to make all assessment calculations, to produce all ensuing bills or payments, to notify applicants, colleges and appropriate service departments, and to effect automatically any amendments to rent and rate accounts.

Scales of charges and rebate conditions will be stored within the computer and available like all other common data for interrogation. Personal details will be either copied or abstracted from the application form. These details will be automatically checked against any information, acquired from any source, which is already recorded.

The computer will subsequently initiate re-assessment procedures, and may be used to schedule commitments for Further Education awards for the Education department and to produce statistics of applicants, claims, rebates and grants as required.

All assessment claims will thus be co-ordinated and information will be available to service departments subject to appropriate safeguards.

6. Staff Records and Payroll

It is proposed to extend officer and employee payroll records to include data required for personnel and establishment purposes, and to provide access to this file by a names index as well as by the payroll number. In addition to payroll data the records will contain details of training and qualifications; a cross-reference to a file of established posts; recent holiday and sickness history; present office location. Access to portions of such records will need to be restricted.

It is anticipated that it will be possible to make available to employing departments sufficient staff information to render local records unnecessary except for personal correspondence files. Establishment lists and the internal directory will thus be available for automatic production if still required. The maintenance of staff history records containing details of career development and superannuation contributions will be considered, e.g. for the purpose of calculating refunds and transfer values and for general inquiry and analysis, but this may constitute a later extension to the system.

Employing departments will provide details of new employees and basic payroll data amendments, via a terminal, and will also use the terminal for inspecting individual records. Payroll variations thus notified will take immediate effect.

It is proposed to use the computer to calculate emergency wage payments in "real time", that is by providing payslip details as immediate terminal output.

Batch processing remains appropriate for routine payroll calculations, and printed output will remain substantially unchanged although there will no longer be a need for a general print out of personal details. It is hoped to reduce the volume of timesheet data by basing the labour element of job costs upon work study targets, thus reducing the need for the submission of individual time sheets, and by using direct terminal communications with employing departments to facilitate data vetting and to improve methods of staff control.

Staff records will also be used for making and recording miscellaneous payments by cheque where this is necessary. Payroll deductions will be automatically posted to debtors' accounts where appropriate.

Another improvement to be investigated is the communication of credit transfers to the bank clearing system by magnetic tape.

7. Creditors and Stock

A feature of the new creditors procedures will be the separation of the records of commercial suppliers from those of private individual creditors. The former will be based on a computer file of contracts, standing orders and approved suppliers. For the latter, payments will be recorded against personal records which will exist primarily for other purposes, e.g. staff and debtors' records. Payment of student grants and awards will be initiated and scheduled following income assessment.

The aims of the ordering procedures will be to establish expenditure commitments and to accomplish computer checking of invoices. These difficult tasks will be rendered easier by the use of terminals for the notifying and amending of orders, and for the clerical apportionment of invoices in complex cases.

The computer will be used to progress orders and to record receipts. Stock levels will then be up-to-date and accurate, and automatic assistance with re-ordering can be contemplated as a further extension.

Cheques will be printed some two or three times weekly, and will subsequently be matched against bank returns (which may themselves be in machine readable form) to produce totals, of un-presented cheques, and additional details when required.

8. Job Progressing and Costing—Revenue Works

In this area very substantial changes in method are possible if the use of data terminals is fully exploited. The principal objectives are:-

- (a) To reduce delays in the execution of works requisitions by cutting out as much administrative paper movement between departments as possible.
- (b) To assist in the scheduling of jobs, allocation of resources and associated administrative tasks.
- (c) To make available to all interested parties information about the progress and cost of jobs,

- (d) To use the computer to calculate bonus payments and to report on labour utilisation,
- (e) To reduce the risk of error inherent in the selection and copying of job codes.
- (f) To make the job costing system more useful to management, including the provision of information as to commitments incurred.
- (g) To maintain historical records of work and expenditure on individual highways, buildings and other assets.

The methods proposed for meeting these objectives involve the following steps:-

- (i) Records will be set up for individual assets incorporating area codes and any physical descriptions which may be useful when planning or allocating work.
- (ii) Ordinary works requisitions will be notified direct to the computer via a terminal for allocation to the work queue of the appropriate jobbing section.
- (iii) Jobbing superintendents and architects concerned with Minor Works will be able to inspect any appropriate work queue or a summary of it at a terminal, and take a hard copy of any work requisition requiring their attention. Subsequently the job description in the requisition may be amended, and the task allocated to the appropriate foreman.
- (iv) The foreman will be able to inspect his work queue at a terminal, analysed by area if necessary, select the tasks for action during the following day (or week) and specify the materials required, consulting accurate computer stock levels as he does so. The computer will produce printed copies of the details of each job if necessary, and a schedule of materials required, raising commitments where appropriate. The storeman, after making the issues, will notify the computer of any changes or substitutions to the list. Stock issues will thus be recorded and costed.
- (v) For each job or stage the target hours for labour will be submitted to the computer and may be used in calculating the labour element of the job cost if a standard labour cost system proves acceptable. In all cases details of overtime and non-bonusable work will require a separate submission. If standard costing is adopted variance accounts will be maintained for each group of employees.
- (vi) The computer will calculate bonus for each group and apportion payments to each man. Bonus could thus be paid for the current pay-week, instead of one week in arrear, if desired.
- (vii) Job completions will be notified to departments (e.g. Housing Lettings section) as required.
- (viii) Bills for trench reinstatements and rechargeable works will be produced automatically.
- (ix) Requisition numbers, dates and costs will be entered in a historical cost file to provide cumulative records of maintenance and other expenses for individual installations.

It is considered that these facilities should provide material assistance to a number of departments, should reduce their clerical work, provide better control and increase productivity.

9. Accounting and Budgetary Control

The provision of more easily available and up to the minute accounting information is one of the needs which the

proposed system will be designed to meet. The ability to consult a central file of accounting records at any time, to receive the information in clear form with plain language descriptions, and even, within limitations, to make corrections to it, will be welcomed by every department. In designing the system it is essential to continue to study each department's particular needs, not only for accounting, but more especially in associated management reporting. As indicated in Section B, finance reporting is still insufficiently linked to other reporting particularly in the use of yardsticks and unit standards which may be used to measure performance.

It is recommended that the aims of the proposed reporting system should be as follows:-

- (i) Both estimated and actual expenditure Will be related wherever possible to measurable quantities of service (e.g. expenditure on the care of children in homes should include a specification of the number of children, and expenditure on redecoration of properties should be accompanied by a statement of the number of properties or their size). It is to be anticipated that with the new system, recording of actual quantities of service can in many cases be extracted as a by-product of transactions such as (in the examples given above), case placement records or job completions.
- (ii) A conflict occurs in some cases between a need on the one hand for detailed allocation to identify precisely where over-spending occurs, and a desire on the other for broad expenditure headings to permit flexibility in the allocation of resources and virement. The various purposes of revenue account coding must therefore be re-considered with a view to resolving this conflict.
- (iii) The coding system must accordingly be extended to facilitate compilation of separate accounts for a wider range of individual establishments and for types of work within broad headings such as 'repair and maintenance'. Facilities for across-the-board subjective totalling should be extended.
- (iv) To reduce the additional coding work implied in (iii), a system of elemental coding should be devised, whereby the full expenditure code can be automatically constructed from the submission of subject and object elements.
- (v) The problem of knowing exactly what has been included in the totals against any expenditure coded must be solved, partly by more immediate costing, and partly by better access to selected historical cost items.
- (vi) Budgetary control techniques must take more flexible account of the patterns of expenditure expected on individual codes. In areas where committed expenditure is a critical factor, commitment accounting must take account of the difference between commitments for a whole year implied by contracts with staff and suppliers, and once-off commitments implied by the placing of a specific order.
- (vii) As an extension to the foregoing, techniques of budget forecasting will be developed, whereby

The above aims are intended to increase the relevance of accounting to the requirements of managerial control, and to provide a means for measuring the efficiency of services and the effectiveness of expenditure.

projections of predictable components of expenditure totals (such as salaries and debt charges) may be made automatically. Unit costs in individual services and establishments, which can serve as the basis for evaluating alternative strategies, will be developed where possible and incorporated into the system. The feedback of maintenance costs already proposed will also be developed.

These proposals are designed not only to assist with the preparation of annual estimates and budgets, but also to lay a

foundation on which a "budget model" of the financial working of the Council's services can be built up, This will assist rate planning, and over a period will increase the proportion of total expenditure which is directly controllable.

APPENDIX 4: OUTLINE PROPOSALS FOR EXTENSION APPLICATIONS

1. EXTENSION OF LAND AND PROPERTY RECORDS
2. EXTENSION OF PERSONAL RECORDS
3. TEACHERS' RECORDS
4. FURTHER FINANCIAL PROCEDURES

APPENDIX 4: OUTLINE PROPOSALS FOR EXTENSION APPLICATIONS

1. Extension of Land and Property Records

The Nucleus provides for a General Property File to coordinate the records maintained for rating assessments, council dwellings and mortgages. This General Property File will therefore be comprehensive at that stage. Extensions are then envisaged to the files associated with property, to include the following:-

1.1 Records of sites or parcels of land, each record relating as a general rule to the site of one building. Any building sub-divided into two or more individually addressable units will require that number of associated records on the General Property File. Each site record can be identified by its common street address, the GLC parcel number, a grid or map reference, and cross-references to the associated properties.

Records will also contain the area of the site and the ground area of the buildings; age and condition of buildings; number of housing and parking units; and reference to the appropriate traffic zone, enumeration district, planning areas, etc.

These records will be available for interrogation and analysis, either alone, or in conjunction with property data (e.g. land use and rateable value), or with ad hoc surveys.

1.2 A register of all commercial property in the borough, including buildings used by the Council. This register will cross-refer to the General Property File, and to records in departments dealing with commercial premises or organisations. The records will carry data about the organisations using the premises, their business, and their contacts with the Council. Access to the file should be possible both through an index of business names and through the street index.

It is envisaged that the records will contain details of, or references to, leases, inspections, licences, refuse collection agreements, and youth employment vacancies and may thus be used for various reminder and control purposes. Trades will be coded in great detail, and some data about employment and traffic generation may be included, principally for town planning purposes.

1.3 The register of Local Land Charges on the computer, subject to the necessary consent from the Lord Chancellor. The site records will cross-refer to the L.L.C. register entries, and thus replace the present index.

A further proposal is to maintain records of plans, schedules and planning decisions needed for answering the property enquiries which commonly accompany L.L.C. searches. All searches and enquiries may thus be referred to the computer, and the responses printed out. The correct form of answers will be stored as common data. Searches will be recorded.

Besides the saving of time and effort in making searches, the accumulation of a central pool of physical data and planning

data, available to all departments for interrogation and analysis, is likely to prove of great value.

1.4 A file of abstracts of planning decisions will also be maintained, cross-referenced to parcel records. This file will be available for analysis, e.g. to determine the total effect of all outstanding decisions, or to locate precedents for present applications. It can also be used to provide a check-list for physical inspections, and can in effect automatically eliminate lapsed consents.

1.5 Special records for properties within development areas, for use in the progressing of property acquisition, decanting and demolition.

1.6 Provision will be made for the association of ad hoc surveys with permanent files, so that questionnaire responses can be extended to include known data about premises and occupants, and also for the longer-term storage of such surveys to permit automatic comparisons when subsequently repeated. This facility will also enable data from external sources, such as the census, to be related to groups of records within the borough's own information files.

Since the identification and measurement of change plays an important part in town planning, it is considered worthwhile to provide some basis for a relatively long-term historical data bank.

The above proposals merely indicate some of the ways in which records of land and property may be extended and used within the information system. There is no doubt that there is immense scope for further development of this section of the Data Bank. In due course one may look ahead to using digital plotters and other sophisticated equipment for input and output needed for mapping and design work.

2. Extension of Personal Records

The Nucleus provides for a General Personal File to coordinate the records maintained for ratepayers, council tenants, mortgagors and other debtors and income assessment. It is subsequently proposed to extend the General Personal File by adding to the Data Bank records of various groups of people which are required for specific data processing functions. It would seem unlikely that any attempt to produce a complete population file for its own sake would be either successful or justifiable.

In general the data processing requirements on personal records follow certain common patterns, which include the following:-

- (a) lists of people of a certain class, either nominated individually or eligible according to precise criteria
- (b) names and addresses of such people printed on individual documents
- (c) totals and analyses of such people and their recorded attributes
- (d) routine notification of certain types of information (e.g. personal movements) to interested offices
- (e) relation of services given to relevant expenditure and income codes.

The information required is primarily for administrative and managerial purposes, and professional data is not normally involved. There are however certain areas, e.g. health inspections, where much of the professional information is sufficiently limited in variability to be usefully transferred to the computer for analysis.

It is most likely, therefore, that it will be possible to write a number of general routines to enable the computer to meet the general requirements, with facilities either to specify particular requirements ad hoc or to set up a library of specialised routines.

These will include:-

- (a) automatic criteria for selection (e.g. vaccination)
- (b) specialised formats for printing (e.g. electoral registration)
- (c) various opportunities for data capturing, such as "turn-around" of annotated computer printouts
- (d) links with other parts of the Data Bank and with routine applications

The cross-referencing facility, whereby for example an individual can be related to a record of his residence, and a child to his parents and to his school, will prove invaluable in linking related records and eliminating the duplication of data.

The most important groupings of people to be considered in the context of such generalised facilities are shown below, with an indication of some of the uses to which the records could be put.

2.1 ELECTORS

- Production of canvass book in which last year's register is printed with names of current occupiers alongside
- Addressing of Form A
- Production of Lists B and C and automatic incorporation of changes in a draft register: notification of changes to interested departments
- Determination of juror qualifications
- Production of final Register
- Production of poll-cards, list of absent voters and proxies

Note: this application, in conjunction with those of the Nucleus, will furnish the General Personal File with at least a family surname for virtually every household in the borough.

2.2 INFANTS

- Circulation of births information
- Vaccination and immunisation schedules, appointment cards, re-appointments, reminders, and analyses
- Toddlers' clinic appointment schedules and cards
- Special clinic appointment schedules and cards
- Scheduling for entry into Primary Schools
- Nursery School Lists
- Assessment of parental income for day nurseries (included in Nucleus)
- Statistical returns

2.3 SCHOOL-CHILDREN

Appointments for health and dental inspections and for further vaccinations: schedules, letters to parents, re-appointments and analysis.

- School registers and class lists.
- Optimisation of secondary school placements by linear programming.
- Lists of new admissions, out-borough children, leavers, children receiving special services
- Appointments for youth employment interviews.
- Standard letters to parents, e.g. for school journeys.
- Analysis of subjects taken, examination candidates and results, career choices.
- Assessment of parental income and rendering of accounts for rechargeable services (included in Nucleus).
- Recoupment of costs.
- Statistical returns.

2.4 COLLEGE STUDENTS

- Course registers
- Examination lists, notification of results
- Standard letters to employers
- Checking of part-time teachers pay-claims
- Teacher/pupil contact reports
- Recoupment of costs
- Statistical returns

2.5 CASEWORK ABSTRACTS

(appropriate, with due variations, to children's and welfare services, mental health care and after care).

- Statutory registers (held where permissible in the computer)
- Lists of cases receiving certain types of treatment or placement (e.g. children in homes, blind people with free radios)
- Lists of cases due for visits or review
- Appointments for health inspections
- Payments to foster-parents and local authorities
- Assessment of income of parent or next-of-kin, and rendering of accounts (included in Nucleus)
- Relation of placements to expenditure codes
- Statistical returns

2.5 HOUSING APPLICANTS

- Analysis of housing requirements
- Lists of applications within specific ranges of points
- Transfer to housing "pool"

2.7 MISCELLANEOUS

Records of other groups receiving services may be taken on to the computer where routine data processing problems exist, e.g. dog licence holders (reminders) other personal health services (appointments), or GPs (payments and cross-references). The computer can also be used to produce notifications of deaths and other events to interested departments.

3. Teachers' Records

The teachers' payroll records may be extended to include professional and personal details. These will provide the Education department with a roll of its entire teaching staff, including the pool of supply teachers, casual lecturers, etc.

- (a) Production of school establishment and staff lists, and lists of probationers.
- (b) Control of staff, graded posts and allowances by number and cost.
- (c) Production of routine reports and returns on staff appointments, absences and resignations, and associated statistics,
- (d) Assessment of salaries.
- (e) Checking of pay-claims from part-time teachers (in association with class records).
- (f) Scanning for persons with certain skills, qualifications and experience (especially for allocating regular or supply staff to temporary vacancies).
- (g) The provision of one of the essential requirements for the planning of school timetables by computer.

It would accordingly be possible to dispense with many manual records, enhance communications between the Education and Treasurer's departments, and reduce the time spent on compiling staff returns and statistics, besides making available facilities for analysis not at present possible.

The recommendations of the D.E. & S. and Local Public Authorities Computer Panel joint working party on teacher's records have been examined and it is not considered that they are incompatible with these proposals.

4. Further Financial Procedures

The computer may be used to carry out further procedures for the Borough Treasurer, and these may include:-

- Maintenance of capital budget records.
- Maintenance of loans pool including advances to capital projects.
- Maintenance of Internal Funds including contributions to such funds and advances from them.
- The calculation, allocation and transference of debt charges.
- Servicing of loans.
- The routine forecasting of cash balances and optimisation of short-term debt transactions.
- Reconciliation of the Council's bank account, (provided that bank statements can be supplied by the bank in machine readable form).

APPENDIX 5: SUMMARY FILE DESCRIPTIONS FOR NUCLEUS DATA BANK

1. INTRODUCTION
2. FILE DESCRIPTIONS
3. ESTIMATED SIZE OF NUCLEUS DATA BANK

1. Introduction

(i) This appendix describes the files listed below. File references refer to Figure 4:- Data Bank—Logical Organisation (page 37).

(a) Indexes

1. Street index (A.1)
2. Out-borough addresses index (A.1)
3. Staff index (A.3)
4. Commercial organisations index (A.6)

(b) Property and people-general files

5. General property file (B.1)
6. General personal file (B.2)

(c) Property and people-special files

7. Rates: assessments and single accounts (C.1)
8. Rates: multiple owners accounts (C.1)
9. Rates: history (C.1)
10. Mortgage and mortgagors' accounts (C.2)
11. Mortgage history (C.2)
12. Council housing and tenants' accounts (C.3)
13. Housing history (C.3)
14. Streets: sub-records (C.6)
15. Streets: Junctions (C.6)
16. Streets: traffic signals (C.6)
17. Streets: lighting installations (C.6)
18. Families approved for rehousing (C.9)
19. Income assessments (C.14)

(d) Work resources and accounts—current files (permanent)

20. Revenue budget (D.5)
21. Standing jobs (D.6)
22. Established posts (D.8)
23. Staff payroll and personnel details (D.10,12)

24. Creditors' accounts (D.14,15, E.6)
25. Contracts (D.14)
26. Annual orders (D.14)
27. Regular payments (D.15)
28. Recurring debtors (D.16)
29. Stores (D.17)
30. Vehicles and plant (D.18)

(e) Work, resources and accounts—current files (transitory)

31. Work requisitions (E.1)
32. Trench re-instatements (E.1)
33. Special jobs (E.2)
34. Work queues (E.3)
35. Bonus (E.4)
36. Orders (E.5)
37. Miscellaneous debtors (E.8)

(f) Work, resources and accounts—historical files

38. Repair and maintenance histories (F.1)
39. Cost account histories (F.3)

(ii) In estimating file sizes figures are quoted for both fixed and variable length records. For the latter all items of data are assumed to be packed i.e. there are no non-significant characters held. Where items in a record are not compulsory the size of a nominal record has been calculated which incorporates the average number of bytes per record for variable items.

It is appreciated that working in fixed length records would be expensive in backing store requirements. The general approach to file design will be to consider each file individually to decide whether it should be constructed in fixed field mode, variable field mode or variable blocks within a fixed area. Thus, the file sizes stated may be thought of as the maxima and minima sizes likely. It should be noted that the file descriptions below deal only with files expected to be held 'on-line'.

2. File Descriptions

1.1 Title: *Street index*

1.2 Description of principal record:

- a) Main key: street name
- b) Principal items of data: street name, street number, and cross-references to other files.
- c) Estimated record size:
Fixed length: alpha = 50 bytes; numeric = 14 bytes.
- d) Expected number of records=1,300.

1.3 Total file size: Fixed: 83,200 bytes

1.4 Purposes:

- a) Batch processing Utilised in conjunction with application files
- b) Demand processing Utilised in accessing other files

1.5 Links with other Files in the Data Bank:

Property file
Parcels file
Street sub-records (including traffic data)

Note: A street sub-record contains data (as defined below e.g. physical dimensions of carriageway and footway) that is specific to the length of street between two junctions. Therefore a 'length of street' may represent a total street or just a small part of that street.

2.1 Title: *Out-borough addresses index*

2.2 Description of principal record:

- a) Main key: reference number
- b) Principal items of data: address
- c) Estimated record size:
Fixed length: alpha = 100 bytes;
numeric = 3 bytes
Variable length: alpha = 50 bytes;
numeric = 3 bytes
- d) Expected number of records: 7,500

2.3 Total file size:

Fixed: 774,000 bytes
Variable: 397,000 bytes

2.4 Purposes:

To support all applications and demand processing requiring addresses outside the borough.

- 3.1 Title: *Staff index*
- 3.2 Description of principal record:
- a) Main key: name of employee
 - b) Principal items of data: references to pay and personnel details
 - c) Estimated record size:
Fixed length: alpha = 48 bytes; numeric = 9 bytes
Variable length: alpha = 24 bytes; numeric = 9 bytes
 - d) Expected number of records: 8,500
- 3.3 Total file size:
Fixed: 484,500 bytes
Variable: 277,500 bytes
- 3.4 Purposes:
To support applications and demand processing requiring names of staff.
- 3.5 Links with other files in the Data Bank:
Staff payroll and personnel details
- 4.1 Title: *Commerical organisations index*
- 4.2 Description of principal record:
- a) Main key: reference number
 - b) Principal items or data: name of the organisation: cross-references to property file, commercial premises, suppliers, raring, other debtors.
 - c) Estimated record size:
fixed length: alpha: 75 bytes; numeric = 21 bytes.
 - d) Expected number of records: 18,000.
- 4.3 Total file size: Fixed: 1,728,000 bytes.
- 4.4 Purposes:
- a) Batch processing
Used in conjunction with other indexes for certain jobs.
 - b) Demand processing
To provide access to sundry files detailed below.
- 4.5 Links with other files in the Data Bank:
Rates assessments
Rates multiple owners
Creditors' accounts
Contracts
Annual orders
Regular payments
Recurring debtors
Commercial premises

- 5.1 Title: *General property file*
- 5.2 Description of principal record:
- a) Main key: street code; other key: unique portion of postal address
 - b) Principal items of data:
Hereditament reference, rateable value, land use and area codes (up to 3 for any one record), cross-references to general personal file, rates files, mortgage file, council dwellings, site/parcel records, commercial premises, street records, local land charges registers, families approved for rehousing; nature of property and position in building.
 - c) Estimated record size:
Fixed length: alpha = 30 bytes; numeric = 86½ bytes
Variable length: alpha = 12 bytes; numeric = 27 bytes
 - d) Expected number of records: 86,000
- 5.3 Total file size:
Fixed: 10,019,000 bytes
Variable: 3,354,000 bytes
- 5.4 Purposes:
- a) Batch processing: All applications requiring addresses.
 - b) Demand processing: All interrogation where "address" is start point.
- 5.5 Links with other files in the Data Bank:
As listed in 'Principal items of Data' above
- 6.1 Title: *General personal file*
- 6.2 Description of principal record:
- a) Main key: Soundex code; other key: serial number within code.
 - b) Principal items of data:
Full name, initials, date of birth, sex, cross-references to property file, family, application files.
 - c) Estimated record size:
Fixed length: alpha = 59 bytes; numeric = 80 bytes
Variable length: alpha = 32 bytes; numeric = 27½ bytes
 - d) Expected number of records: 75,000
- 6.3 Total file size:
Fixed: 10,425,000 bytes
Variable: 4,462,500 bytes
- 6.4 Purposes:
- a) Batch processing:
All applications requiring names of individuals other than staff, teachers and college students.
 - b) Demand processing:
 - i) To provide basic details about residents and individuals with whom the Council has dealings.
 - ii) To facilitate access to application files by providing references to all records held for an individual.
- 6.5 Links with other files in the Data Bank:
General property file
Rates assessments
Rates multiple owners
Mortgagors's accounts
Council tenants
Families approved for re-housing
Income assessments
Individual creditors
Regular payments
Debtors
Electoral roll
Housing applicants
Infants
Schoolchildren
Casework abstracts
Recipients of miscellaneous services
Library borrowers

- 7.1 Title: *Rates assessment file*
- 7.2 Description of principal records:
- (i) Assessment record
 - a) Main key: assessment number; other key: scheduled assessment chain.
 - b) Principal items of data: Description, R.V.'s and effective dates, allowances, rating category, cross-reference to general property and personal files, schedule no., occupancy dates.
 - c) Estimated record size: Fixed length: alpha = 27 bytes; numeric = 51 bytes
Variable length: alpha = 4 bytes; numeric = 29 bytes
 - d) Expected number of records: 71,000
 - (ii) Rates account
 - a) Main key: account number
 - b) Principal items of data: Arrears, debit for period, credit, costs, arrears/credit on proposal, payment history, dates start and end of account, recovery action, instalment details, changes to demand, cross-references to income assessment data, mortgage details and name.
 - c) Estimated record size: Fixed length: numeric 183 bytes
Variable length: numeric = 57 bytes
 - d) Expected number of records: 71,000
- 7.3 Total file size:
Fixed: 18,602,000 bytes
Variable: 6,354,500 bytes
- 7.4 Purposes:
- a) Batch processing
 - i) To post payments
 - ii) To process recovery stages
 - iii) To perform start-of-period calculations and produce demands and supporting tabulations.
 - b) Demand processing
 - i) To provide assessment or account details.
 - ii) To update records and action amendments.
 - iii) To action reports.
- 7.5 Links with other files in the Data Bank:
Commercial organisations index
General property file
General personal file
Multiple owners
Mortgagors' accounts
Council dwellings
Income assessments
Rates history file
- 8.1 Title: *Rates multiple owners*
- 8.2 Description of principal records:
- a) Main key: multiple owner's number; other keys: reference to first and last assessment on this schedule, reference to name.
 - b) Principal items of data: No. of assessments, totals of R.V., allowances, summary of assessment debits and credits, recovery action, instalment details, payment history, income assessment and mortgage references.
 - c) Estimated record size: Fixed length: numeric = 187½ bytes
Variable length: numeric = 46½ bytes
 - d) Expected number of records: 6,100
- 8.3 Total file size:
Fixed: 1,130,750 bytes
Variable: 283,620 bytes
- 8.4 Purposes:
- a) Batch processing
 - i) To post payments
 - ii) To process recovery stages
 - iii) To perform start-of-period calculations and produce demands and supporting tabulations.
 - b) Demand processing
 - i) To provide schedule and account details
 - ii) To update records and action amendments
 - iii) To action reports
- 8.5 Links with other files in the Data Bank:
Commercial organisations index
Out-borough addresses
General personal file
Rates assessment file
History file
Income assessments

- 9.1 Title: *Rates history file*
- 9.2 Description of principal record:
- a) Main key: reference to assessment or account; other key: history record number
 - b) Principal items of data: Effective date, reason, adjustments, annotation, date notified.
 - c) Estimated record size:
Fixed length: Assessment: alpha = 15 bytes; numeric = 14 bytes
Account: alpha = 30 bytes; numeric = 16½ bytes
 - d) Expected number of records—Assessment 60,000; Account 100,000
- 9.3 Total file size: Fixed: 6,390,000 bytes
- 9.4 Purposes:
- a) Batch processing
 - i) To provide complete accounting records at end-of-period
 - ii) To provide account details in recovery stages
 - b) Demand processing
 - i) To provide assessment and account history
 - ii) To record changes notified
- 9.5 Links with other files in the Data Bank:
- Assessment file
Rates multiple owners' accounts

- 10.1 Title: *Mortgages and mortgagors' account*
- 10.2 Description of principal records:
- ii) Mortgage record
 - a) Main key: mortgage number (probably incorporating rating assessment reference)
 - b) Principal items of data: Loan details, interest details, start-of-year balances, insurance details, balances outstanding, adjustments.
 - c) Estimated record size:
Fixed length: alpha = 4 bytes; numeric = 45 bytes
Variable length: alpha = 4 bytes; numeric = 33½ bytes
 - d) Expected number of records: 5,000
 - ii) Mortgage account
 - a) Main key: account number
 - b) Principal items of data: References to personal, property and rates files, tax reference, insurance details, cash account, debit transfers, fees and costs, payments history, recovery actions
 - c) Estimated record size:
Fixed length: alpha = 18½ bytes; numeric = 198½ bytes
Variable length: alpha = 18½ bytes; numeric = 91½ bytes
 - d) Expected number of records: 5,000
- 10.3 Total file size:
Fixed: 1,207,500 bytes
Variable: 645,000 bytes
- 10.4 Purposes:
- a) Batch processing
 - i) To effect transfers to the account and raise bills.
 - ii) To post payments.
 - iii) To process recovery stages.
 - iv) To produce insurance schedules and annual statements.
 - v) To calculate start-of-year figures and effect costings.
 - b) Demand processing
 - i) To interrogate accounts
 - ii) To calculate redemption values
 - iii) To action reports
- 10.5 Links with other files in the Data Bank:
- General personal file
General property file
Rates assessments
Mortgage history

- 11.1 Title: *Mortgage history*
- 11.2 Description of principal record:
- a) Main key: reference to mortgage or account; other key: history record number
 - b) Principal items of data: Effective date, reason, adjustments, annotation, date notified
 - c) Estimated record size: Fixed length: alpha = 35 bytes; numeric = 10 bytes
 - d) Expected number of records: 5,000
- 11.3 Total file size: Fixed: 225,000 bytes
- 11.4 Purposes:
- a) Batch processing
 - i) To provide complete accounting records at end-of-year.
 - ii) To provide movement details in recovery stages.
 - b) Demand processing
 - i) To provide mortgage and account history.
 - ii) To record changes notified.
- 11.5 Links with other files in the Data Bank:
Mortgages and mortgagors' accounts
- 12.1 Title: *Council housing and tenants' accounts*
- 12.2 Description of principal records:
- i) Council dwelling or garage
 - a) Main key: Reference number; other key: Tenants' account number.
 - b) Principal items of data: Type or property, no. of bedrooms, permitted no. of occupants, pram shed no., net rent, components of rent, rates, water rate, void details, acquisition details, collection cycle.
 - c) Estimated record size: Fixed length: numeric 68 bytes
Variable length: numeric = 37 bytes
 - d) Expected number of records: 14,000
 - ii) Tenants account
 - a) Main key: Account number, other key: dwelling reference.
 - b) Principal items of data: Date occupation, rent due, total rent, debit raised, recovery details, references to personal files and property file, payment history, income assessments.
 - c) Estimated record size: Fixed length: numeric 132½ bytes
Variable length: numeric = 57 bytes
 - d) Expected number of records: 14,000
- 12.3 Total file size:
Fixed: 2,807,000 bytes
Variable: 1,316,000 bytes
- 12.4 Purposes:
- a) Batch processing
 - i) To carry out annual rent and rate calculations.
 - ii) To post payments
 - iii) To produce lists of council housing.
 - iv) To raise debits and produce voids lists and management reports.
 - v) To process recovery stages.
 - b) Demand processing
 - i) To provide dwelling and account details.
 - ii) To action lettings and record amendment submissions.
 - iii) To action reports.
- 12.5 Links with other files in the Data Bank:
General property file
General personal file
Rates multiple owners
Housing history
Families approved for rehousing
Income assessments
Repair and maintenance histories

13.1 Title: *Housing history file*

13.2 Description of principal record:

- a) Main key: dwelling or account number; other key: history record number
- b) Principal items of data: Effective date, reason, adjustment, annotation, date notified
- c) Estimated record size: Fixed length: alpha = 20 bytes, numeric = 7 bytes
- d) Expected number of records: 10,000

13.3 Total file size: 270,000 bytes

13.4 Purposes:

- a) Batch processing
 - i) To provide complete history at end-of-year
 - ii) To provide account details in recovery stages
- b) Demand processing
 - i) To provide dwelling and account history
 - ii) To record changes notified

13.5 Links with other files in the Data Bank:

Council housing and tenants' accounts

14.1 Title: *Street sub-record file*

14.2 Description of principal record:

- a) Main key: street number
- b) Principal items of data: physical dimensions and construction of carriageways and footways, location, area code, camber, speed limit, gradient, accident history, restriction times, terminal points, parking duration, parking capacity, traffic volumes and compositions at various times (peak, off-peak, weekends, weekdays), cross references to other files detailed in 5 below.
- c) Estimated record size: Fixed length: alpha = 5 bytes, numeric = 276 bytes Variable length: alpha = 5 bytes, numeric = 101 bytes
- d) Expected number of records = 4,000

14.3 Total file size:
Fixed: 1,080,000 bytes
Variable: 424,000 bytes

14.4 Purposes:

- a) Batch processing
 - i) To serve as the basic record for the accumulation of data derived from accidents, traffic, parking surveys, traffic schemes and for subsequent production of analyses.
 - ii) To assist in transportation oriented problem—solving techniques.
- b) Demand processing
 - To provide detailed history information

14.5 Links with other files in the Data Bank:

Junctions
Light installations
Trench re-instatement
Traffic signal data
Street index
Repair and maintenance histories

15.1 Title: *Junctions file*

15.2 Description of principal record:

- a) Main key: junction number; other key: traffic signal data
- b) Principal items of data: cross-reference to traffic signal data, the type of junction, the capacity, the traffic volume and composition at various times (peak, off-peak, weekend, weekday), number of accidents, etc. presence of safety fences and nameplates and other data such as exit points, average vehicle delay through junction, camber, etc.
- c) Estimated record size:
Fixed length: numeric = 82 bytes
Variable length: numeric = 74 bytes
- d) Expected number of records: 2,500

15.3 Total file size:

Fixed: 205,000 bytes
Variable: 185,000 bytes

15.4 Purposes:

- a) Batch processing
 - i) To serve as the basic record for the accumulation of junction data (accidents, traffic surveys, traffic schemes) and subsequent production of statistics.
 - ii) To assist in transportation—oriented problem—solving techniques.
- b) Demand processing
To provide detailed history information.

15.5 Links with other files in the Data Bank:

Street index
Traffic signal data
Street sub records

16.1 Title: *Traffic signals*

16.2 Description of principal record:

- a) Main key: junction number; other key: installation number.
- b) Principal items of data: hours of operation, manufacturer, highway and maintenance authorities, the phase timings e.g. maximum green, vehicle interval, etc., plus a history of defects reported and action taken, etc.
- c) Estimated record size:
Fixed length: numeric = 174 bytes
- d) Expected number of records: 34

16.3 Total file size: Fixed: 5,916 bytes

16.4 Purposes:

- a) Batch processing
Use in accident statistics, traffic surveys/ schemes and subsequent production of statistics.
- b) Demand processing
To provide detailed information as and when required.

16.5 Links with other files in the Data Bank:

Junctions
Street sub-records

- 17.1 Title: *Light installations*
- 17.2 Description of principal record:
- a) Main key: street number; other key: installation number
 - b) Principal items of data: installation data and type, column type, number of lamps, time-switch etc., plus maintenance details.
 - c) Estimated record size:
Fixed length: numeric 123 bytes
Variable length: numeric = 33 bytes
 - d) Expected number of records: 11,000
- 17.3 Total file size:
Fixed: 1,353,000 bytes
Variable: 363,000 bytes
- 17.4 Purposes:
- a) Batch processing
 - i) To serve as the basic record for the accumulation of data so as to facilitate subsequent analysis.
 - ii) Street lighting account schedules (E.E.B.)
 - b) Demand processing
To provide detailed history information.
- 17.5 Links with other files in the Data Bank:
Junctions file
Street index
- 18.1 Title: *Families approved for rehousing*
- 18.2 Description of principal record:
- a) Main key: Reference number; other key: references to personal and property files.
 - b) Principal items of data: Family details, date approved, points, references to rehoused address, remarks.
 - c) Estimated record size:
Fixed length: alpha = 30 bytes; numeric = 24 bytes
Variable length: alpha = 10 bytes; numeric = 22 bytes
 - d) Expected number of records: 1,200
- 18.3 Total file size:
Fixed: 52,800 bytes
Variable: 38,700 bytes
- 18.4 Purposes:
- a) Batch processing
 - i) To record committee decisions and rehousing.
 - ii) To carry out file analysis.
 - b) Demand processing
To provide details for allocation of houses.
- 18.5 Links with other files in the Data Bank:
General property file
General personal file

19.1	Title: <i>Income assessments</i>	20.1	Title: Revenue budget
19.2	Description of principal record:	20.2	Description of principal record:
a)	Main key: reference number; other key: cross-reference to personal file.	a)	Main key: code number; other keys: references to special/standing jobs.
b)	Principal items of data: Reference to property file, reference to parents, employers, income, allowances, deductions, result of assessment calculations, service received, reassessment date.	b)	Principal items of data: Description, estimate, budgetary control data, feasibility code, expenditure/income totals by source, service work measurements.
c)	Estimated record size: Fixed length: alpha = 84 bytes, numeric = 613 bytes Variable length: alpha = 42 bytes, numeric = 207 bytes	c)	Estimated record size: Fixed length: alpha = 30 bytes, numeric = 92½ bytes Variable length: alpha = 12 bytes, numeric = 31½ bytes
d)	Expected number of records: 18,000	d)	Expected number of records 6,000
19.3	File size: Fixed: 7,023,500 bytes Variable: 2,140,775 bytes	20.3	Total file size: Fixed: 795,000 bytes Variable: 279,000 bytes
19.4	Purposes:	20.4	Purposes:
a)	Batch processing	a)	Batch processing
i)	To process assessment applications	i)	To post charges
ii)	To carry out file analysis	ii)	To produce management statistics and reports
iii)	To produce accounts for services given	b)	Demand processing
iv)	To initiate re-assessment procedures	i)	To provide accounting, budgetary control and some management reporting
b)	Demand processing	ii)	To action reports
i)	To provide assessment details		
ii)	To action reports		
19.5	Links with other files in the Data Bank: General personal file General property file Council housing Rates: assessments and single accounts Rates: multiple owners accounts Debtors and creditors files	20.5	Links with other files in the Data Bank: Special jobs Standing jobs Cost account histories All files generating charges

- 21.1 Title: *Standing jobs*
- 21.2 Description of principal record:
- a) Main key: standing job number; other key: expenditure code.
 - b) Principal items of data: description, the number of jobs and work units completed and the total hours allocated plus cost totals by source, etc.
 - c) Estimated record size:
Fixed length: alpha = 30 bytes; numeric = 52 bytes
Expected number of records: 2,000
- 21.3 Total file size:
Fixed: 164,000 bytes
- 21.4 Purposes:
- a) Batch processing
 - i) To accumulate costs per job type and calculate the average unit costs.
 - ii) To generate accountancy level charges.
 - b) Demand processing
To provide enquirer with total costs, etc. per job type
- 21.5 Links with other files in the Data Bank:
Work requisitions
Revenue budget
Repair and maintenance histories
Cost account histories
- 22.1 Title: *Established posts*
- 22.2 Description of principal record:
- a) Main key: post number and department
 - b) Principal items of data: description and grade, occupant and grade, job evaluation rating, cross-reference to staff payroll and personnel details.
 - c) Estimated record size:
Fixed length: alpha = 28 bytes; numeric = 6 bytes
Variable length: alpha = 22 bytes, numeric = 6 bytes
 - d) Expected number of records: 2,000
- 22.3 Total file size:
Fixed: 68,000 bytes
Variable: 56,000 bytes
- 22.4 Purposes:
- a) Batch processing:
Establishment lists
 - b) Demand processing:
All establishment enquiries concerning posts
- 22.5 Links with other files in the Data Bank:
Staff payroll and personnel details

23.1 Title: *Staff payroll and personnel details*

23.2 Description of principal records:

- i) payroll record
 - a) Main key. employee number
 - b) Principal items of data:
Gross pay, tax, insurance, holiday, sickness, etc. cross-reference to establishment posts, creditors and debtors files.
 - c) Estimated record size:
Fixed length: alpha = 143 bytes; numeric = 87 bytes
Variable length: alpha = 25½ bytes; numeric = 43 bytes
 - d) Expected number of records: 8,500
- ii) personnel details
 - a) Main key: employee number
 - b) Principal items of data:
Service conditions, holiday entitlement, other standard data
 - c) Estimated record size:
Fixed length: alpha = 21 bytes; numeric = 70½ bytes
Variable length: alpha = 3 bytes; numeric = 45 bytes
 - d) Expected number of records: 8,500

23.3 Total file size:
Fixed 10,555,527 bytes
Variable: 3,150,360 bytes

23.4 Purposes:

- a) Batch processing
payroll, costing, listing, production of telephone directory, production of casual statistics/analyses
- b) Demand processing
 - i) all pay enquiries
 - ii) emergency payments
 - iii) all establishment enquiries

23.5 Links with other files in the Data Bank:

Established posts
Creditors
Recurring debtors
Miscellaneous debtors

	Unit Records	Max units	Av. units	No. of holders	FA	FN	VA	VN
(i)	Non-tax allowance	2	1	8,500	Nil	2	Nil	2
	Plus rates	4	2	2,000	Nil	2	Nil	2
	Regular deductions	7	3½	8,500	Nil	14	Nil	12
	Recoveries	10	5	8,500	Nil	17	Nil	14
	Salary allocation	8	4	8,000	Nil	5	Nil	5
	Pensions allocation	3	1½	750	Nil	5½	Nil	5½
(ii)	Qualifications	8	4	2,000	Nil	7	Nil	6½
	Sickness	6	1½	8,500	20	10½	10	7½
	Accident	6	1	8,500	20	13½	10	10
	Leave	6	6	8,500	20	7½	1	6
	Leaver	1	1	3,000	198	10	99	9

- 24.1 Title: *Creditors' Accounts*
- 24.2 Description of principal record:
- a) Main key: supplier's number
 - b) Principal items of data: cross-references to indexes. method of payment, credits outstanding, regular payments and annual order numbers and various statistics e.g. number of payments, number of orders.
 - c) Estimated record size:
Fixed length: numeric 47 bytes
 - d) Expected number of records = 6,000
- 24.3 Total file size:
Fixed: 282,200 bytes
- 24.4 Purposes:
- a) Batch processing
 - i) Accumulation of information (as described above).
 - ii) Production of cheques.
 - b) Demand processing
 - i) Accessing regular payment/annual order records
 - ii) Updating
 - iii) To provide history information
- 24.5 Links with other files in the Data Bank:
- Revenue budget
 - Capital budget
 - Orders
 - Annual orders
 - Regular payments
 - Contracts
 - Staff payroll and personnel details
 - Commercial organisations index
 - General property file
 - Out-borough addresses
 - General personal file
 - Personal account histories
- 25.1 Title: *Contracts*
- 25.2 Description of principal records:
- i) Contractor's Account
 - a) Main key: suppliers number; other key: contract number
 - b) Principal items of data: contract sum, date, date for possession, extensions granted, certificate details, retention details, bond details plus other information.
 - c) Estimated record size
Fixed length: alpha = 254 bytes;
numeric = 659 bytes
Variable length: alpha = 94 bytes;
numeric = 131 bytes
 - d) Expected number of records: 300
 - ii) Fees Account
 - a) Main key: suppliers number, other key: contract number
 - b) Principal items of data: certificate details e.g. date of certificate, number of payments. amount paid and last cheque number:
 - c) Estimated record size:
Fixed length: alpha = 888 bytes;
numeric = 1,895 bytes
Variable length: alpha = 148 bytes;
numeric = 74 bytes
 - d) Expected number of records = 450
- 25.3 Total file size:
Fixed: 1,526,250 bytes
Variable: 169,200 bytes
- 25.4 Purposes:
- a) Batch processing
 - i) To maintain the contracts register in its entirety.
 - ii) Production of cheques:
 - b) Demand processing
 - i) To provide history information.
 - ii) Acquisition of payment authorisation.
 - iii) Notification of variation orders.
- 25.5 Links with other files in the Data Bank:
- Commercial organisations index
 - General property file
 - Out-borough addresses
 - Capital budget
 - Revenue budget
 - Personal account histories

26.1	Title: <i>Annual orders</i>	27.1	Title: <i>Regular payments</i>
26.2	Description of principal record:	27.2	Description of principal record:
a)	Main key: order number; other key: supplier's number	a)	Main key: regular payment number; other key: supplier's number
b)	Principal items of data: order number, expenditure code, description of goods/services, amounts ordered, received and paid for to date, current unit price, date last order, etc.	b)	Principal items of data: description of the payment, amount (fixed or slightly variable) of money, date of next payment, expenditure codes and various data e.g. tax to date and number of payments remaining this year.
c)	Estimated record size: Fixed length: alpha = 20 bytes; numeric = 50 bytes	c)	Estimated record size: Fixed length: alpha = 40 bytes; numeric = 70 bytes
d)	Expected number of records: 400.	d)	Expected number of records: 500.
26.3	Total file size: Fixed: 28,000 bytes.	27.3	Total file size: Fixed: 55,000 bytes:
26.4	Purposes:	27.4	Purposes:
a)	Batch processing	a)	Batch processing
i)	Production of computer produced orders.	i)	To make payments of fixed amounts without receipt of invoices
ii)	Production of overdue order tabulations	ii)	To make payments of fixed (or slightly variable) amounts on receipt of invoices.
iii)	Production of cheques.	iii)	To calculate and reduce commitment as and when appropriate.
b)	Demand processing	b)	Demand processing
i)	To notify stores program of all stores orders placed and executed (against annual orders), and the accountancy programs of all commitments.		To provide history information.
ii)	To provide history information.		
iii)	To assist in invoice checking		
26.5	Links with other files in the Data Bank:	27.5	Links with other files in the Data Bank:
	Stores		Creditors accounts
	Creditors' accounts		Capital budget
	Capital budget		Revenue budget
	Revenue budget		Commercial organisations index
			General property file
			Out-borough addresses
			General personal file

- 28.1 Title: *Recurring debtors*
- 28.2 Description of principal record:
- a) Main key: account number; other key: reference to personal file.
 - b) Principal items of data:
References to personal and property files, description, details of debt, balance of account, routine movement dates, recovery details, payment history.
 - c) Estimated record size:
Fixed length: alpha = 100 bytes; numeric = 370 bytes
Variable length: alpha = 30 bytes; numeric = 50 bytes
 - d) Expected number of records: 3,000.
- 28.3 Total file size:
Fixed: 1,410,000 bytes
Variable: 207,000 bytes
- 28.4 Purposes:
- a) Batch processing
 - i) To produce accounts and raise debit
 - ii) To process recovery stages
 - iii) To post payments
 - b) Demand processing
 - i) To provide account details
 - ii) To maintain file
 - iii) To action reports
- 28.5 Links with other files in the Data Bank:
- General personal file
General property file
Out-borough addresses
Income assessments
Revenue budget
Trench re-instatement
Hall lettings
Staff payroll and personnel details
Other debtors file
- 29.1 Title: *Stores*
- 29.2 Description of principal records:
- i) Commodity heading record
 - a) Main key: commodity code
 - b) Principal items of data:
The commodity heading record contains data which is common to all items of that commodity irrespective of the stores in which it is held e.g. commodity code, price, description, ordering data (unit of order, optimum ordering quantity, suppliers' numbers etc.) various statistics (total number of issues, units issued, annual demand, etc.).
 - c) Estimated record size:
Fixed length: alpha — 60 bytes; numeric = 46 bytes
 - d) Expected number of records: 5,500.
 - ii) Commodity store record
 - a) Main key: commodity code
 - b) Principal items of data:
The commodity store record contains data which is common to all items of that commodity held within a single specific store e.g. re-order and danger levels, outstanding orders data, stock balance, various statistics (transfer-in, transfers-out, write-offs, etc.).
 - c) Estimated record size:
Fixed length: numeric = 96 bytes
 - d) Expected number of records = 8,500.
- 29.3 Total file size:
Fixed: 1,379,000 bytes.
- 29.4 Purposes:
- a) Batch processing.
 - i) To prepare and print tabulations as required e.g. re-order reports, stores accounts
 - ii) To price issues, returns, etc. and generate costs incorporating oncost,
 - b) Demand processing
 - i) To maintain accurate stock levels by accepting notifications of issues, returns, transfers, etc., and orders and receipts.
 - ii) To provide history information.
- 29.5 Links with other files in the Data Bank:
- Costing files
Orders
Annual orders

- 30.1 Title: *Vehicles and plant*
- 30.2 Description of principal record:
- a) Main key: vehicle/plant number
 - b) Principal items of data: description, ownership charges, charging rate, total hours worked, service hours, overtime hours, fuel/oil consumption, capital cost, estimated life.
 - c) Estimated record size:
Fixed length: alpha = 72 bytes; numeric = 150 bytes
Variable length: alpha = 72 bytes; numeric = 97 bytes
 - d) Expected number of records: 350
- 30.3 Total file size:
Fixed: 77,700 bytes
Variable: 59,150 bytes
- 30.4 Purposes:
- a) Batch processing
 - i) Preparation of a cumulative statement of equipment usage and costs.
 - ii) Preparation of reports e.g. milometer breaks.
 - iii) Generation of costs.
 - b) Demand processing
To provide history information
- 30.5 Links with other files in the Data Bank:
Costing files
- 31.1 Title: *Work requisition*
- 31.2 Description of principal records:
- a) Main key: job number; other key: expenditure code
 - b) Principal items of data: job description, job status code, urgency code, area code, plus details of commodities required, scheduled start-date, gang/employee to whom allocated, target hours for each job stage etc.
 - c) Estimated record size:
Special jobs: Fixed length: alpha = 340 bytes; numeric = 123 bytes
Variable length: alpha = 140 bytes; numeric = 123 bytes
Standing jobs: Fixed length: alpha = 31 bytes; numeric = 55 bytes
Variable length: alpha = 31 bytes; numeric = 35 bytes
 - d) Expected number of records:
Special jobs: 500
Standing jobs: 2,000
- 31.3 Total file size:
Fixed: 385,500 bytes
Variable: 263,500 bytes
- 31.4 Purposes:
- a) Batch processing:
Production of work-in-progress statements e.g. end of year.
 - b) Demand processing:
 - i) To transmit requisition details to the relevant jobbing sections (or minor works) work queue.
 - ii) To serve as the basic record for the accumulation of data for work to be done prior to printing combined works/materials requisition.
 - iii) To provide enquirers with current position.
- 31.5 Links with other files in the Data Bank:
Work queues
Special jobs
Standing jobs
Stores
Orders
General name and address indexes

- 32.1 Title: *Trench reinstatement*:
- 32.2 Description of principal records:
- a) Main key: voucher number; other key: location code
 - b) Principal items of data: utility code, measurements, scheduled start date, actual start date and completion date, cost details etc.
 - c) Estimated record size:
Fixed length: numeric 81 bytes
Variable length: numeric = 52 bytes
 - d) Expected number of records = 750
- 32.3 Total file size:
Fixed: 60,750 bytes
Variable: 39,000 bytes
- 32.4 Purposes:
- a) Batch processing
 - i) To control the work progressing of trench reinstatements and provide statistics about street "turnover" to be used at a later stage to forecast future workloads.
 - ii) To price individual trench re-instatements and produce a composite bill automatically per utility.
 - iii) To notify utility of start-date.
 - b) Demand processing
To provide history information.
- 32.5 Links with other files in the Data Bank:
Street file
Costing files
Work queues
Standing jobs
Repair and maintenance histories
- 33.1 Title: *Special jobs*
- 33.2 Description of principal records:
- a) Main key: job number; other key: expenditure code
 - b) Principal items of data: cost totals by sources, start date, completion date, cross-reference to history etc.
 - c) Record size:
Fixed length: numeric: 60 bytes
 - d) Expected number of records = 2,000
- 33.3 Total file size:
Fixed: 120,000 bytes
- 33.4 Purposes:
- a) Batch processing
 - i) To accumulate costs by source
 - ii) To generate accountancy level charges
 - b) Demand processing
To provide enquirers with current cost situation
- 33.5 Links with other files in the Data Bank:
Capital budget
Revenue budget
Repair and maintenance histories
Cost account histories

- 34.1 Title: *Work queues*
- 34.2 Description of principal record:
- a) Main key: job number
 - b) Principal items of data:
data which is necessary to carry out the work queue processing e.g. requisition number, requisition date, scheduled start-date, status of job, cross-reference to requisition details, etc.
 - c) Estimated record size:
Fixed length: alpha = 1 byte; numeric = 49 bytes
 - d) Expected number of records = 2,500
- 34.3 Total file size:
Fixed = 125,000 bytes
- 34.4 Purposes:
- a) Batch processing: none
 - b) Demand processing:
To provide system with means of controlling work queue progressing from requisition to physical completion.
- 34.5 Links with other files in the Data Bank:
Special jobs
Standing job
Work requisitions
- 35.1 Title: *Bonus*
- 35.2 Description of principal records:
- i) Employee record
 - a) Main key: employee number; other key: scheme number
 - b) Principal items of data:
Time lost details (weather, materials, etc.), allowed times, total clock hours, bonus hours, total bonus, etc.
 - c) Record size:
Fixed length: alpha = 15 bytes; numeric = 63 bytes
 - d) Expected number of records: 700
 - ii) Scheme record
 - a) Main key: scheme number
 - b) Principal items of data:
The scheme record consists of details similar to the employee's bonus record plus others e.g. average bonus, average percentage performance on measured work, etc.
 - c) Estimated record size:
Fixed length: alpha = 27 bytes; numeric = 30 bytes
 - d) Expected number of records: 12
- 35.3 Total file size: Fixed 55,284 bytes
- 35.4 Purposes:
- a) Batch processing
 - i) Calculation of individual employee's bonus payment
 - ii) Production of bonus scheme statistics/reports.
 - b) Demand processing
To provide the enquirer with detailed history information.
- 35.5 Links with other files in the Data Bank:
Standing jobs
Special jobs
Capital budget
Revenue Budget
Staff payroll and personnel details

- 36.1 Title: *Orders*
- 36.2 Description of principal record:
- a) Main key: order number; other keys: suppliers numbers, expenditure code and commodity code
 - b) Principal items of data: requisition, delivery and payment details e.g. suppliers number, description of goods or services, commodity code, delivery points, expenditure codes, amount paid and cheque number(s)
 - c) Estimated record size:
Fixed length: alpha = 860 bytes; numeric = 306 bytes
Variable length: alpha = 260 bytes; numeric = 101 bytes
 - d) Expected number of records: 8,250
- 36.3 Total file size:
Fixed: 9,641,500 bytes
Variable: 2,978,250 bytes
- 36.4 Purposes:
- a) Batch processing
 - i) Production of computer-produced orders
 - ii) Production of overdue order tabulations
 - iii) Production of cheques
 - b) Demand processing
 - i) To store orders for subsequent printing by the computer.
 - ii) To notify the stores program of all stores orders placed and executed, and the accountancy programs of all commitments.
 - iii) To provide history information.
 - iv) To carry out invoice checking.
- 36.5 Links with other files in the Data Bank:
- Stores
 - Costing files
 - Creditors' accounts
 - Work requisitions
- 37.1 Title: *Miscellaneous debtors*
- 37.2 Description of principal record:
- a) Main key: Account number; other keys: references to personal and property files.
 - b) Principal items of data: details and description of debt, payment details, recovery data, and debit outstanding.
 - c) Estimated record size:
Fixed length: alpha = 100 bytes; numeric = 150 bytes
Variable length: alpha = 30 bytes; numeric = 30 bytes
 - d) Expected number of records = 5,000
- 37.3 Total file size:
Fixed: 1,250,000 bytes
Variable: 300,000 bytes
- 37.4 Purposes:
- a) Batch processing
 - i) To post payments
 - ii) To process recovery stage
 - b) Demand processing
 - i) To provide account details
 - ii) To action reports
 - iii) To set up new debtors and generate charges
- 37.5 Links with other files in the Data Bank:
- General property file
 - General personal file
 - Revenue budget
 - Personal account histories

<p>38.1 Title: <i>Repair and maintenance histories</i></p> <p>38.2 Description of principal record:</p> <p>a) Main key: installation number; other keys: expenditure codes.</p> <p>b) Principal items of data: Details of individual jobs completed in respect of specific properties e.g. job description and total cost. In addition against each job is a cross-reference to the cost account history details.</p> <p>c) Estimated record size: Fixed length: numeric = 15 bytes</p> <p>d) Expected number of records = 100,000</p> <p>38.3 Total file size: Fixed: 1,500,000 bytes</p> <p>38.4 Purposes:</p> <p>a) Batch processing Installation oriented work analyses</p> <p>b) Demand processing</p> <p>i) To provide enquirers with detailed history information.</p> <p>ii) To provide link with cost account history data on property oriented cost queries.</p> <p>38.5 Links with other files in the Data Bank:</p> <p>Cost account histories Special jobs Standing jobs Revenue budget Capital budget</p>	<p>39.1 Title: <i>Cast account histories (or movements within current nine-week period)</i></p> <p>39.2 Description of principal record:</p> <p>a) Main key: expenditure code (job/accountancy code); other key: installation number.</p> <p>b) Principal items of data: cost details of jobs identified by source e.g. materials—commodity code, number of units, cost.</p> <p>c) Estimated record size: Fixed length: numeric = 12½; bytes</p> <p>d) Expected number of records: 177,000</p> <p>39.3 Total file size: Fixed: 2,212,500 bytes</p> <p>39.4 Purposes:</p> <p>a) Batch processing Production of installation oriented cost analyses.</p> <p>b) Demand processing To provide enquirers with detailed cost history information.</p> <p>39.5 Links with other files in the Data Bank:</p> <p>Repair and maintenance histories Special jobs All files generating expenditure charges</p>
--	--

3. Estimated size of Nucleus Data Bank

File No. (Figure 4 ¹)	File Name	No. of records	Size in bytes	
			Fixed	Variable
A.1	Street index	1,300	83,000	83,000
A.1	Out-Borough addresses index	7,500	774,000	397,000
A.3	Staff index	8,500	485,000	278,000
A.6	Commercial organisations index	18,000	1,728,000	1,728,000
B.1	General property file	86,000	10,019,000	3,345,000
B.2	General personal file	75,000	10,425,000	4,463,000
C.1	Rates: assessments, single accounts	142,000	18,602,000	6,355,000
C.1	Rates: multiple owners accounts	6,100	1,131,000	284,000
C.1	Rates: history file	160,000	6,390,000	6,390,000
C.2	Mortgages & mortgagors' accounts	10,000	1,208,000	645,000
C.2	Mortgage history	5,000	225,000	225,000
C.3	Council housing & tenants' accounts	28,000	2,807,000	1,316,000
C.3	Housing history file	10,000	270,000	270,000
C.6	Streets: sub-records	4,000	1,080,000	424,000
C.6	Streets: junctions	2,500	205,000	185,000
C.6	Streets: traffic signals	34	6,000	6,000
C.6	Streets: lighting installations	11,000	1,353,000	363,000
C.9	Families approved for re-housing	1,200	65,000	39,000
C.14	Income assessments	18,000	7,024,000	2,141,000
D.5	Revenue budget	6,000	795,000	279,000
D.6	Standing jobs	2,000	164,000	164,000
D.8	Established posts	2,000	68,000	56,000
D.10, 12	Staff payroll and personnel	8,500	10,556,000	3,151,000
D.14, 15, E.6	Creditors' accounts	6,000	282,000	282,000
D.14	Contracts	750	1,526,000	169,000
D.14	Annual orders	400	28,000	28,000
D.15	Regular payments	500	55,000	55,000
D.16	Recurring debtors	3,000	1,410,000	207,000
D.17	Stores	14,000	1,379,000	1,379,000
D.18	Vehicles and plant	350	78,000	59,000
E.1	(Work requisitions	2,500	386,000	264,000
	(Trench re-instatements	750	61,000	39,000
E.2	Special jobs	2,000	120,000	120,000
E.3	Work queues	2,500	125,000	125,000
E.4	Bonus	712	55,000	55,000
E.5	Orders	8,250	9,642,000	2,978,000
E.8	Miscellaneous debtors	5,000	1,250,000	300,000
F.2	Repair and maintenance histories	100,000	1,500,000	1,500,000
F.3	Cost account histories	177,000	2,213,000	2,213,000
			95,573,000	42,367,000
D.20	User housekeeping		2,000,000	2,000,000
	Systems housekeeping		15,000,000	15,000,000
	Total		112,573,000	59,367,000

1 Original was Figure 4 but should be 5

APPENDIX 6: NOTES ON COMPUTER MANUFACTURERS

This appendix briefly reviews the six manufacturers considered. Two further manufacturers—De La Rue Bull and the Control Data Corporation—were approached but did not participate in the study. Full details of manufacturers equipment are given in Technical Report No. 7.

Manufacturers' facilities are described under the following headings:-

- a) Range of machines and models considered
- b) Store sizes
- c) Input/output channels
- d) Direct Access devices
- 9) Communications facilities
- f) Software and support

Manufacturers are referred to by abbreviations as follows:-

- | | | |
|------|---|-----------|
| i) | Burroughs Machines Limited | Burroughs |
| ii) | Honeywell Controls Limited | Honeywell |
| iii) | International Business Machines Limited | IBM |
| iv) | International Computers Limited | ICL |
| v) | National Cash Register Co., Limited | NCR |
| vi) | Univac Division of Sperry-Rand | Univac |

1. Range of machines & models considered

BURROUGHS	This company is putting forward its B5500 - 6500 - 8500 range. Compatibility is good from the 6500 upwards but 5500—6500 hardware compatibility is not so complete. However, the 6500 itself covers a fair range and this is the model detailed here.
HONEYWELL	Honeywell is offering the 2200 and 4200 computers from the 200 series.
IBM	IBM proposes the 360 series of machines which provides a compatible range from the model 25 up to the model 85. Models 40, 50, 65 & 75 are considered here.
ICL	The two halves (ex ICT and ex English Electric) of this company have agreed jointly to offer the System 4 range of computers formerly manufactured by English Electric. The range comprises six models, of which the top four (4-40, 4-50, 4-70, 4-75) have compatible hardware and software and are considered here.
NCR	Two models are currently available, the 100 and 200, and a 400 is probably to be announced later. The 200 which is considered here may eventually prove to be of too limited channel capacity, and no dates (or even a definite decision) are yet available for the 400.
UNIVAC	Univac proposes the 418-III and the 1108 machines. Both these machines are designed for real-time processing and the 1108 is a larger machine which may be supplied in multi-processor configurations. They are not fully compatible, hence an expansion from one to the other would cause problems.

2. Store Sizes

BURROUGHS B6500		16K - 524K (Say 65K - 2048K)	52 - bit words bytes)
HONEYWELL 2200 and 4200	2200: 4200:	16K - 262K 131K - 524K	6 - bit characters 6 - bit characters
IBM 360-40, 50, 65, 75	360 - 40: 360 - 50: 360 - 65: 360 - 75:	16K - 262K 65K - 524K 131K - 1048K 262K - 1048K	bytes bytes bytes bytes
ICL SYSTEM 4-40, 50, 70, 75	4 - 40: 4 - 50: 4 - 70: 4 - 75:	65K - 131K 65K - 262K 65K - 1048K 65K - 1048K	bytes bytes bytes bytes
NCR CENTURY 200		32K - 524K	bytes
UNIVAC 418-III and 1108	418 - III: 1108	32K - 131K (Say 65K - 262K 65K - 262K (Say 262K - 1048K	18 - bit words bytes) 36 - bit words bytes)

3. Input/Output Channels

Note:	Fast transfers are to/from magnetic tape or direct access store. Medium speed transfers are to/from paper tape, punched cards, printers. Slow transfers are to/from terminal units
BURROUGHS B6500	Very flexible arrangements. One or two multiplexers each giving 4-10 channels. There are 'floating' channels (not permanently assigned to a device or group of devices). Communications channels are additional to these, see 5 below.
HONEYWELL 2200 and 4200	2200: 8 'floating' channels 4200: 16 or 32 'floating' channels. No details available
IBM 360-40, 50, 65, 75	a) Fast channels, each of which can connect up to 64 fast devices, any one of which may transfer data at one time. The maximum number of fast channels is as follows:- 360-40 : 2, 360-50 : 3, 360-65 & 75 : 6 b) Multiplexor channel, standard on 360-40 and 50, optional on 360-65 & 75 capable of controlling up to 8 simultaneous medium speed transfers from a number of units. One or more of these 8 transfers may be replaced by several simultaneous transfers from slow units, additional equipment being required to multiplex these (see communications (5) below).
ICL SYSTEM 4-40, 50, 70, 75	a) Fast channels, each capable of connecting up to 32 (4-40, 50) or 16 (4-70, 75) fast devices, any one of which may transfer data at one time. The maximum number of fast channels is as follows:- 4-40 & 50 : 3, 4-70 & 75 : 16 b) Multiplexer channel, capable of controlling up to 9 (4-40, 50) or 16 (4-70, 75) simultaneous medium speed transfers. As with IBM, further multiplexing may be done for slow transfers. The 4-40 & 50 each have one multiplexer, the 4-70 & 75 up to 3 but each of these reduces by 1 the maximum no. of fast channels.
NCR CENTURY 200	2 channels dedicated to paper tape or reader and printer respectively. 2 fast channels each capable of connecting 8 fast devices, one of which may transfer data at one time. 4 medium speed channels each capable of multiplexing up to 8 medium speed transfers, or more slow transfers as above.
UNIVAC 418 – III and 1108	418- III: 8-32 channels in one or two modules each of which functions as a multiplexer. Channels must be paired for devices (e.g. drums, communications) which were designed for 1108. 1108: Basically, 16 channels but further units controlling 16 channels each may be added.

4. Direct Access Devices

BURROUGHS B6500	Diskfiles with fixed heads (one per track). Average access times and capacities as follows:-		
	60 ms : 100 million bytes minimum, 25 million byte increments		
	40 ms : 100 million bytes minimum, 20 million byte increments		
	23 ms : Modules of 20 or 100 million bytes		
	20 ms : Modules of 10 million bytes		
HONEYWELL 2200 and 4200	a) Replaceable disk stores: Average access times 75 or 62 ms, capacities 4.6 million - 18.4 million 6- bit characters.		
	b) Grouped replaceable disks (8+1 spare). Average access times 62 ms, total capacities (of 8) 140 or 280 million 6- bit characters.		
	c) Diskfiles. Average access time 75 ms, capacities 150 or 300 million 6 bit characters,		
	d) Drums. Average access time 8.6 ms, capacities 2.1 or 4.2 million 6- bit characters		
IBM 360-40, 50, 65, 75	a) Replaceable disk store. Average access time 75 ms, capacity 7¼ million bytes		
	b) Grouped replaceable disks (8+1 spare). Average access time 75 ms, total capacity (of 8) 232 million bytes.		
	c) Diskfiles. Average access time 100 ms, capacities 113 or 226 million bytes.		
	d) Drum. Average access time 8.6 ms, capacity 4 million bytes.		
	e) Datacell (magnetic tape strips). Average access time 350 ms, capacity 400 million bytes.		
ICL SYSTEM 4-40, 50, 70, 75	a) Replaceable disk store. Average access time 100 ms, capacity 7¼ million bytes.		
	b) Grouped replaceable disks (8+1 spare). Average access time 90 ms, total capacity (of 8) 232 million bytes.		
	c) Diskfiles. Average access time 100 ms, capacities 346 or 692 million bytes.		
	d) Drum (4-70, 75 only). Average access time 12 ms, capacity 2 million bytes,		
NCR CENTURY 200	a) Grouped replaceable disks (2). Average access time 65 ms, total capacity (of 2) 8 million bytes.		
	b) Magnetic card store (CRAM). Average access time 140 ms, capacity 145 million bytes.		
UNIVAC 418 – III and 1108	Drums of various average access times and capacities as below. The Fastrand does not have fixed heads.		
	Fastrand II :	92 ms :	132 million 6- bit characters)
	FH 1782 :	17 ms :	12½ million 6- bit characters)
	FH 880 :	17 ms :	4¾ million 6- bit characters)
	FH 432 :	4.25 ms:	1½ million 6- bit characters)
			All drum transfers require paired channels on 418 - III

5. Communications facilities

BURROUGHS B6500	Modular facilities. Control equipment is required at various levels: for each group of 256 lines, for each group of 32 lines within this, for each group of 16 lines within this. Up to 1024 lines can be connected to each input/output multiplexor (without interfering with the floating data channels), and thus up to 2048 lines to a maximum system.
HONEYWELL 2200 and 4200	A range of control units, multiplexing up to 63 lines per unit
IBM 360-40, 50, 65, 75	A range of control units, multiplexing up to 31 lines per unit, with a maximum of 176 lines per processor
ICL SYSTEM 4-40, 50, 70, 75	A range of control units multiplexing up to 112 lines per unit, (depending on line speed). Maximum no. of lines per processor depends on store speed,
NCR CENTURY 200	a) Communications multiplexor - multiplexes up to 15 devices and uses one medium speed CPU channel. b) Stored program communications processor - multiplexes up to 254 lines and uses one medium speed CPU channel.
UNIVAC 418 - III and 1108	Modular facilities. CTM units each control 2 lines (more if slower speed) and CTMC units each control 16 CTM units. Each CTMC unit requires a pair of channels on 413-III or one channel on 1108.

6. Software and Support

BURROUGHS B6500	a) Executive software is provided to control normal operating requirements including multiprogramming, job scheduling and peripheral device allocation, <i>All</i> programming is in a high-level language, normally ALGOL or COBOL, no assembly language being provided. b) Software to control each user's on-line requirements, e.g. enquiry handling, must be specially written, ideally by the manufacturer and user together. c) Burroughs on-line experience is conspicuous in the banking field, two major banks being about to transfer from B5500 to B6500 systems and several other systems being on order.
HONEYWELL 2200 and 4200	a) MOD 4 Operating system controls multiprogramming and job scheduling. b) See Burroughs (b).
IBM 360-40, 50, 65, 75	a) OS 360 offers a wide range of supervisory functions, including multiprogramming. Additional packages are available for telecommunications control (BATS), data base handling (IMS) and the generation of enquiry response programs (FASTER). b) IBM's experience of on-line work is extensive, particularly in the U.S.A., where there are several local government on-line systems operating over a limited range of applications.
ICL SYSTEM 4-40, 50, 70, 75	a) Operating System J offers the usual batch processing controls, including multiprogramming and job scheduling. b) See Burroughs (b).
NCR CENTURY 200	a) The 'B3 executive' is capable of full multiprogramming. b) See Burroughs (b).
UNIVAC 418 - III and 1108	a) The 'Exec. 8' operating system for the 1108 offers a wide range of supervisory functions specially designed for telecommunications systems. b) Univac has considerable experience of real-time applications and of producing additional software to suit each user's requirements.

