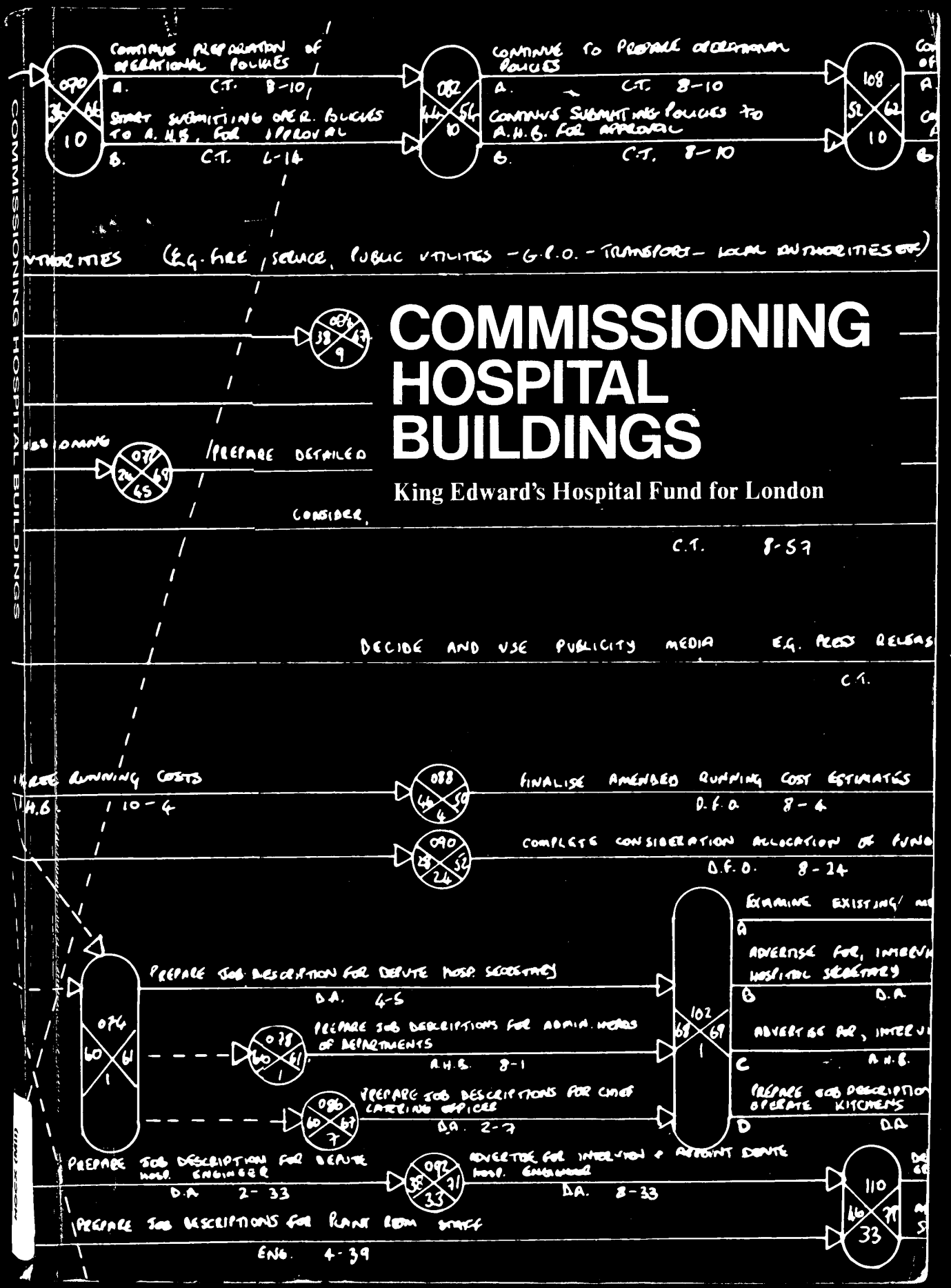
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CONTINUE PREPARATION OF OPERATIONAL POLICIES
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START SUBMITTING OPER. POLICIES TO A.H.S. FOR APPROVAL
B. C.T. 4-16
CONTINUE TO PREPARE OPERATIONAL POLICIES
A. C.T. 8-10
CONTINUE SUBMITTING POLICIES TO A.H.S. FOR APPROVAL
B. C.T. 8-10
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COMMISSIONING HOSPITAL BUILDINGS
King Edward's Hospital Fund for London
PREPARE DETAILED
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DECIDE AND USE PUBLICITY MEDIA E.G. PRESS RELEASE
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FINALISE AMENDED RUNNING COST ESTIMATES
D.F.O. 8-4
COMPLETE CONSIDERATION ALLOCATION OF FUND
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ADVERTISE FOR INTERVIEW & APPOINT DEPUTE HOSP. ENGINEER
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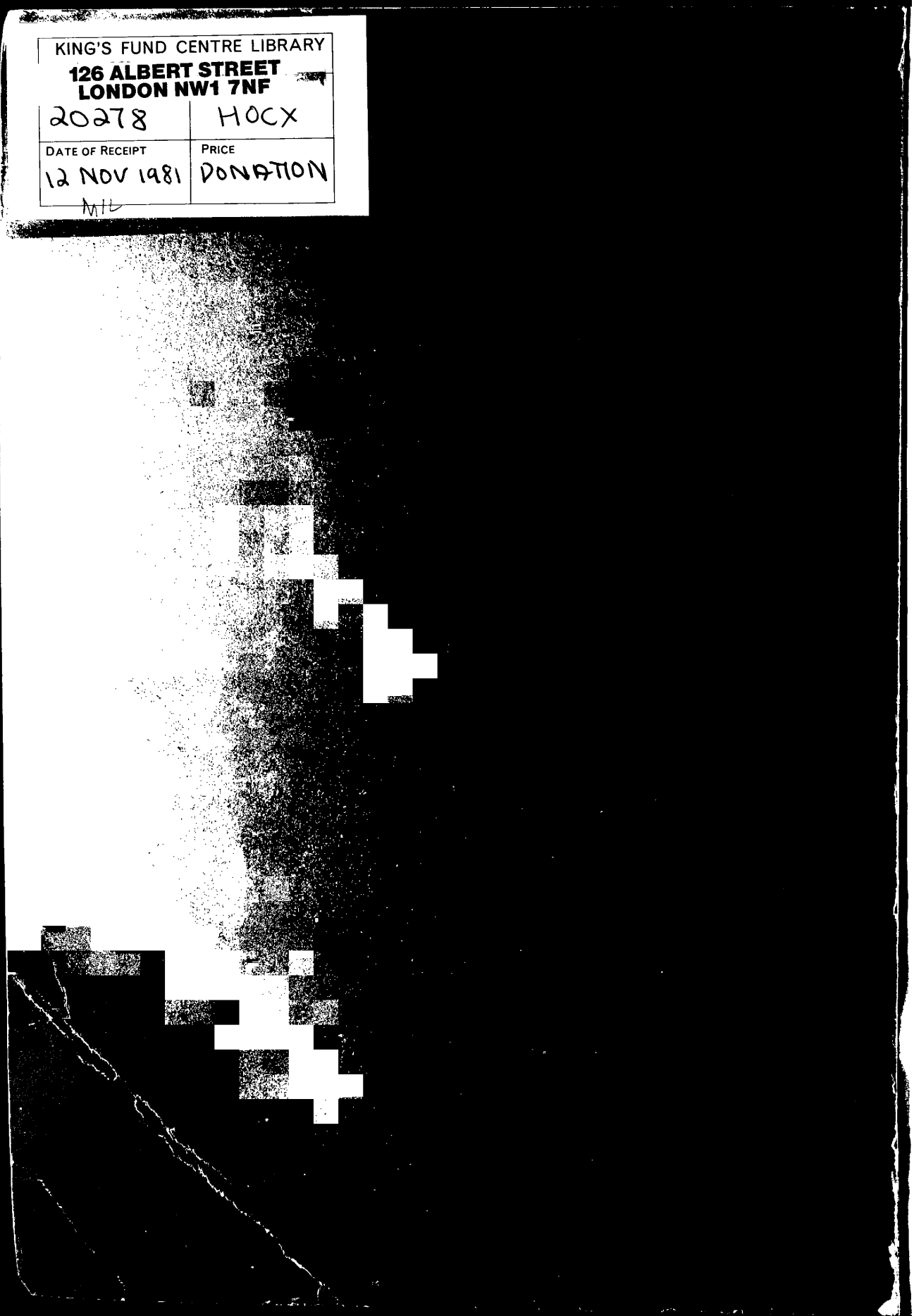

Commissioning Hospital Buildings

King Edward's Hospital Fund for London

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King Edward's Hospital Fund for London is an independent foundation, established in 1897 and incorporated by Act of Parliament 1907, and is a registered charity. It seeks to encourage good practice and innovation in the management of health care by research, experiment and education, and by direct grants.

Appeals for these purposes continue to increase.

The Treasurer would welcome any new sources of money, in the form of donations, deeds of covenant or legacies, which would enable the Fund to augment its activities.

Requests for the annual report, which includes a financial statement and lists of all grants, and other information, should be addressed to the Secretary, King Edward's Hospital Fund for London, 14 Palace Court, London W2 4HT.

Commissioning Hospital Buildings

A King's Fund Guide

Third edition

by Graham Millard

Foreword by John Hoare
Chairman of the Working Party

Published by King Edward's Hospital Fund for London 1981

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Foreword

This edition of *Commissioning Hospital Buildings* is the third to be published by the King's Fund in 15 years. Like its two predecessors, it seeks to meet a constant demand from those who work in the health services for a practical guidebook to the commissioning of new buildings or services. Like the second edition, the book has been substantially rewritten, new material has been added, and the sequence has been changed in the light of experience over the past six years. Although the book addresses specifically the task of opening services in new buildings in the United Kingdom, it is written in a way which it is hoped will be useful to those in other countries.

Of the many changes in the book which have been inspired by events since 1975, I would select as the most significant the emphasis now placed on opening new buildings fully and on time within the constraints of clear revenue budgets, and the strong link which should be forged between those constraints and the initial service plans and capital scheme. The dwindling of revenue increments during the past few years, the introduction of equitable funding policies and the growing need to replace rather than add facilities have all turned a searchlight on to the operational cost of new buildings. Other changes in the book also reflect the times in which we live, and have augmented the context of commissioning: the effect of a new building on district services as a whole and the associated problems of closures and of the change of use of buildings.

The working party supervising the production of this report included three members of the group which was responsible for the second edition. Thus, we have been able to achieve some continuity while profiting from new members of several disciplines who brought fresh insights and experience. We were pleased to welcome a member of the DHSS as a full member of the working party from its inception. Our task was made practicable by Graham Millard who was commissioned by the Fund to research, to write and to prepare the text for publication. This arrangement, which had worked well for the previous edition, involved him in many visits and the writing of a succession of drafts before he and the working party felt confident enough to produce this edition. We and the readers are greatly in his debt.

Finally, in commending this report to health service managers, I would make two important disclaimers. First, the book is not presumed by any of us to be holy writ, or the ultimate message about commissioning: we believe only that it has a great deal to offer the manager faced with a practical task because it is based on the work of others who have commissioned and learned. Secondly, the views and advice given in the report are entirely those of the working party; and do not necessarily represent current policy of the King's Fund or the DHSS or of NHS authorities.

John Hoare
1981

Abbreviations

A and E	accident and emergency department (or services)
ADB	activity data bank
CODOT	classification of occupations and directory of occupational titles
CPA	critical path analysis
CSSD	central sterile supply department
DA	district administrator
DFO	district finance officer
DGH	district general hospital
DHA	district health authority
DHSS	Department of Health and Social Security
DMO	district medical officer
DMT	district management team
DTS	design team surveyor
DWO	district works officer
ECAG	equipment cost allowance guide
ECG	electrocardiogram (department)
ECT	electroconvulsive therapy
ENT	ear, nose and throat (department)
GP	general practitioner
HAA	hospital activity analysis
HSDU	hospital sterile distribution unit
ICL	International Computers Ltd
ITU	intensive therapy unit
LPG	liquid propane gas
LPHW	low pressure hot water
NHS	National Health Service
MRO	maintenance repair order
OPCS	Office of Population Censuses and Surveys
PPM	planned preventive maintenance
RHA	regional health authority
RIBA	Royal Institute of British Architects
RTO	regional team of officers
SCBU	special care baby unit
SPSS	statistical package for the social sciences
TSSU	theatre sterile supply unit
WMRHA	West Midlands Regional Health Authority
WTE	whole-time equivalent

Contents

Introduction

This third edition is different in many respects from the first two because, though the task of commissioning remains fundamentally the same, circumstances have changed. More has to be said about the relationship between planning and commissioning, in the hope that the distinction between project management and commissioning will be clarified. There was justifiable criticism of the second edition which tended to confuse these two distinct activities. More advice is given on how to get the organisation of the commissioning team off to a good start. The financial implications and uncertainties are specially emphasised. The checklists of operational systems have been revised. Commissioning has been more adequately brought into the context of a district's total system of health care. The implications of the task on the reorganisation of local services, including personnel and public relations, are described. A short chapter on closures and transfers has been included.

What has not changed at all is the responsibility of the top management in the district. Bringing a new hospital into use is a major event in the development of the health services of a community. Those services are the responsibility of the local managers: they must therefore be involved in, and committed to, the commissioning process from the beginning.

When does commissioning start and finish?

In the British National Health Service, the work of a commissioning team starts when the tender is let, if only because until that happens there is no possibility that a new building will materialise. Elsewhere, for example another country with no integrated health service, the definition given in the second edition may be more applicable: 'that stage of planning at which the site of the project has been officially decided and the functional content agreed'. In those circumstances, principal officers such as the designated medical director and other professional colleagues who are likely to form part of the hospital's management team should become involved at the stage when operational policies are being formed and room data sheets are being completed. The emergence of the commissioning task from the earlier stage can be developed by the same team.

Whatever the context, however, it remains vitally important for officers from local management to be concerned with setting the objectives for the new building, determining its operational policies, completing data sheets and influencing the running costs of the design. It may turn out that these officers will go on to be responsible for commissioning the building, though that is not essential. The common factor, before commissioning starts and when it starts, is the commitment of local management.

Commissioning ends when the new hospital has been fully operational long enough for its design and operational systems to be evaluated.

Purpose and design of the book

The book is primarily for senior staff working in the British NHS but it is hoped that others engaged in commissioning will continue to find it useful. Each commissioning team, wherever it may be, has to devise its own administrative methods. Commissioning is not a package of techniques: good ideas based on collective experience can be promulgated, but there may be better ones still untried. Staff involved in the process must have an analytical approach to their task throughout, and that includes deciding how to manage the programme, who should be involved and accountable for separate activities, what can be afforded and what deadlines are attainable. In these respects, each project is different.

The terminology has been simplified throughout by referring to new *hospital* buildings. Those who are commissioning smaller buildings, such as an extension to a department, a new day centre or a community clinic, require similar guidance, but adapted to suit a shorter time and a different scale. Checklists to help those involved in smaller projects are on page 30, and in Appendix G (pages 90-96) and Appendix H (page 105).

The book is divided into three parts, called 'phases' to acclimatise readers to planning terminology. Phase I is the **start of commissioning** between the time the tender is let and building starts. The first two chapters mainly cover this phase, but later chapters also include relevant material. Phase II covers the **building and preparation period** and takes the reader up to the date when handover is in sight. The chapter dealing with the completion of activity data sheets may seem out of place here, or indeed in the book, but some commissioning teams do not escape this task. In small projects carried out locally, the design, the equipping and the discussion of operational systems are all embodied in the preparation of data sheets. They also bring in the start of the supplies task, and form the basis of equipment scheduling. Phase III covers the final period – **approaching handover, taking over the building, opening the services** – and ends with a short chapter on evaluation. Chapters in the final part refer back to some of the special subjects described earlier and attempt to summarise the final effort that has to be made to prepare for the first patients to be admitted.

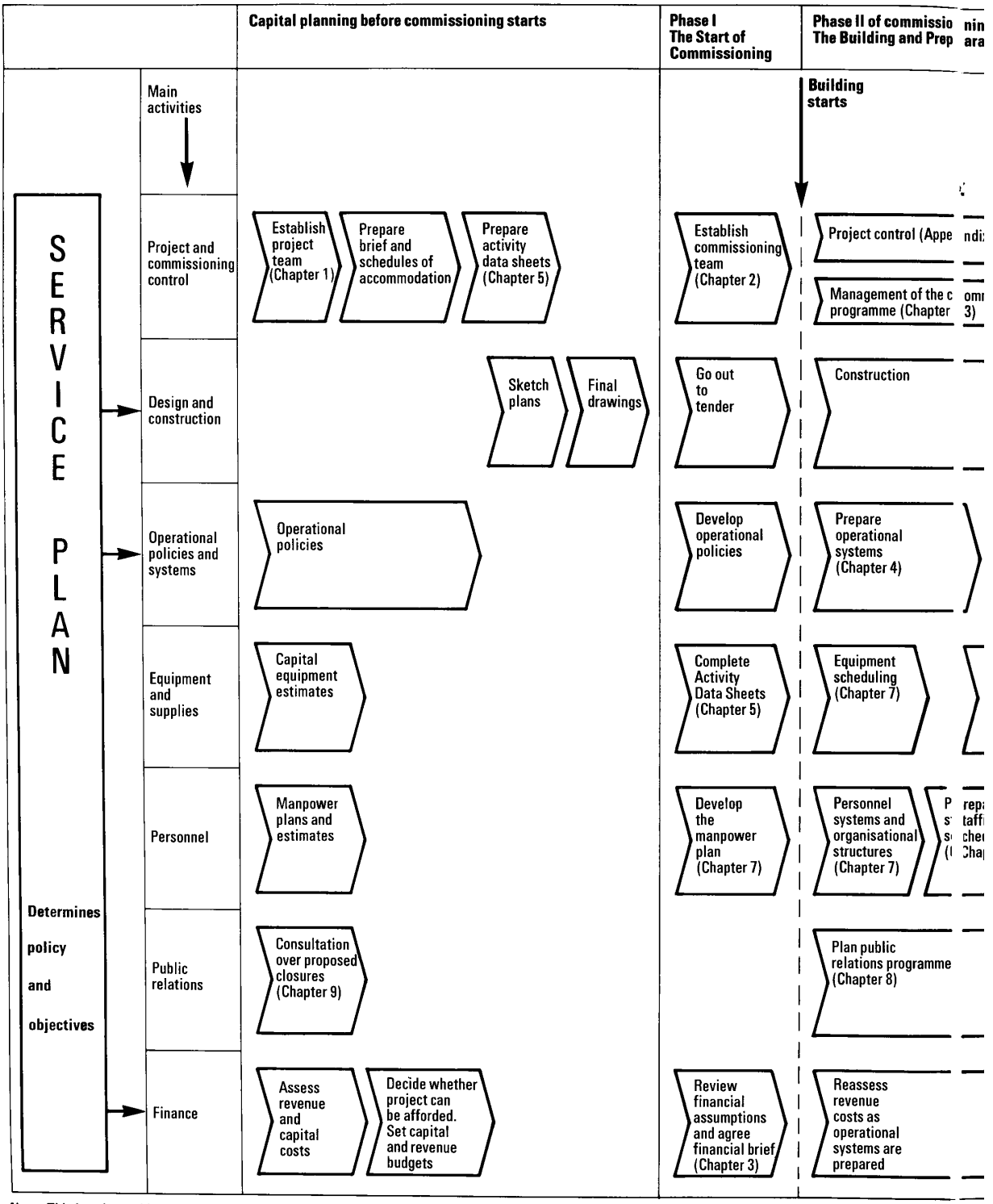
Figure 1 illustrates the whole process from capital planning before commissioning starts, through the three phases of commissioning to the evaluation period.

In the first edition, Brian Langslow summed up his task as follows.

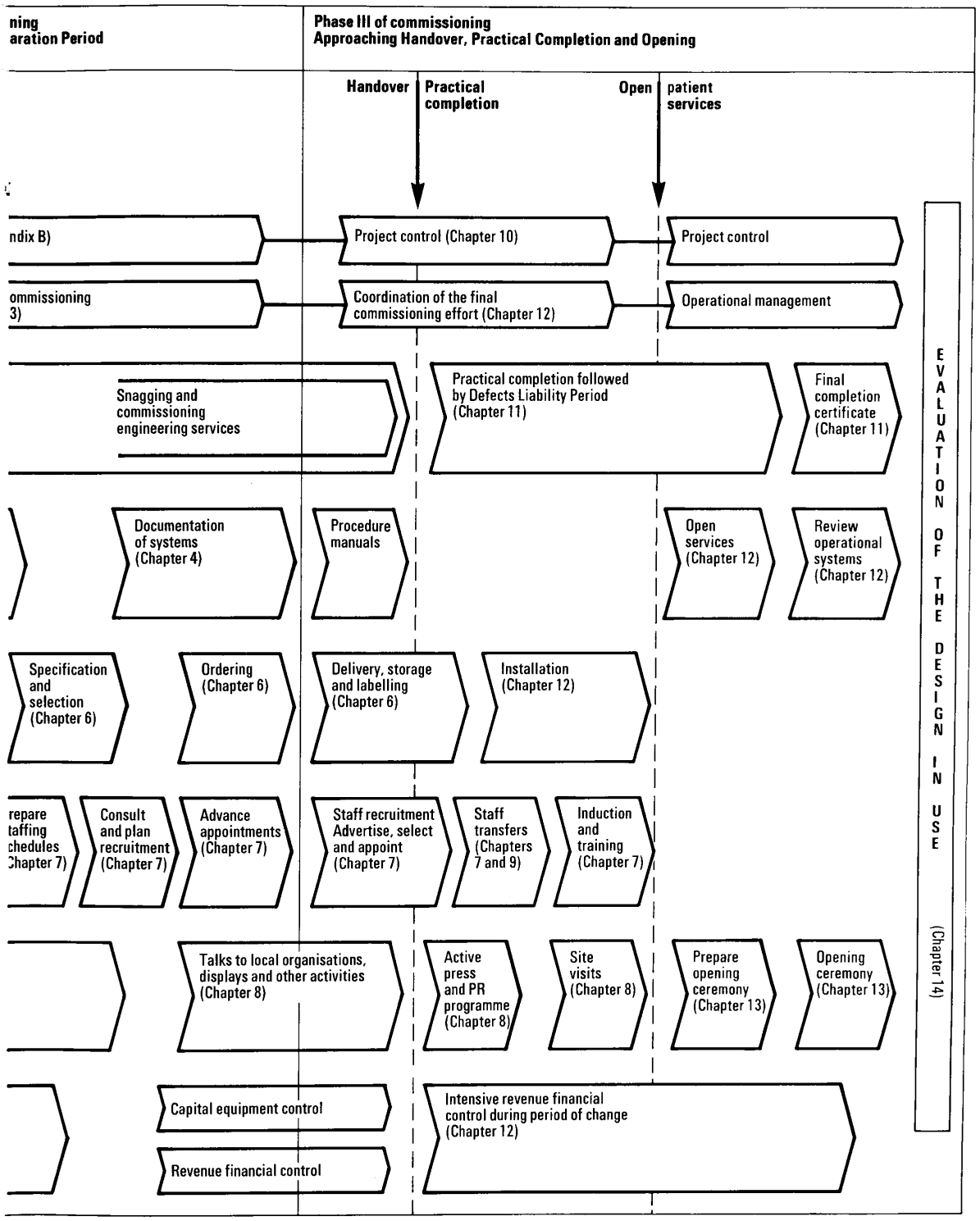
'Writing about commissioning is rather like writing about swimming – it is possible to get some principles and give advice but in the final analysis the only way to achieve proficiency is to jump in and do it!'

That still holds good. But we could add another simile. Commissioning is like a game of snakes and ladders, without the ladders. There are no short cuts. You know there are snakes, but you cannot tell which ones you will land on or how long each one will set you back. The chances for escaping most of them are good and, with luck, everybody gets there in the end.

Figure 1 Guide to commissioning



Note: This is only a guide to the sequence of the main elements in a commissioning programme. There are limitations to a diagram of this kind in as much as many of the tasks will in practice overlap.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aration Period
Phase III of commissioning
Approaching Handover, Practical Completion and Opening
Handover
Practical completion
Open
patient services
ndix B)
Project control (Chapter 10)
Project control
ommissioning 3)
Coordination of the final commissioning effort (Chapter 12)
Operational management
Snagging and commissioning engineering services
Practical completion followed by Defects Liability Period (Chapter 11)
Final completion certificate (Chapter 11)
Documentation of systems (Chapter 4)
Procedure manuals
Open services (Chapter 12)
Review operational systems (Chapter 12)
Specification and selection (Chapter 6)
Ordering (Chapter 6)
Delivery, storage and labelling (Chapter 6)
Installation (Chapter 12)
repare taffing chedules Chapter 7)
Consult and plan recruitment (Chapter 7)
Advance appointments (Chapter 7)
Staff recruitment Advertise, select and appoint (Chapter 7)
Staff transfers (Chapters 7 and 9)
Induction and training (Chapter 7)
Talks to local organisations, displays and other activities (Chapter 8)
Active press and PR programme (Chapter 8)
Site visits (Chapter 8)
Prepare opening ceremony (Chapter 13)
Opening ceremony (Chapter 13)
Capital equipment control
Intensive revenue financial control during period of change (Chapter 12)
Revenue financial control
EVALUATION OF THE DESIGN IN USE (Chapter 14)

Phase I
The Start of Commissioning

1 The start of commissioning

Not till the hours of light return
All we have built do we discern.
Matthew Arnold

The association with service planning

Planning in the National Health Service falls roughly into two categories: service planning and capital planning. In effect, the latter is a subset of the former: service planning is the total activity, and includes short-term and long-term planning. Its purpose is to enable decisions to be made about change: in the nature, disposition and number of services, in their standards, their location and their effectiveness. Whether local or regional, service plans are the engine for accomplishing change and must include consideration of all the resources (capital, revenue, people) as well as judgments on priorities and constraints.

Capital planning is the process of taking from service plans projects which have been clearly identified and turning them into bricks and mortar – through design and building. Commissioning, therefore, is not part of capital planning but is the next step. It is a local management activity in which the district management team (DMT) is committed to turning the bricks and mortar into operational reality within given financial limits. In some projects, services may be expanded and additional revenue provided; in others, the components of the local services may stay roughly the same. In the latter circumstances, management has the job of commissioning largely by redistributing resources. Figure 2 illustrates the way this may happen when commissioning is associated with the much larger task of creating an almost entirely new and more efficient shape to the way local services are provided.

From planning to commissioning

Figure 3 gives a general idea of the stages by which the objectives of service planning are reached. There will be wide variations in practice because several administrative paths can be taken towards the successful opening of a new hospital.

For large developments, most commissioning teams are likely to be established when the regional health authority (RHA) or the building authority lets the tender, by which time the functional content of the scheme will have been decided. An abbreviated form of a functional content is given in Appendix A (page 75). By this time, operational policies should have been fully discussed, decided and documented. This does not imply that local officers will not have contributed to the preparation of these policies, the completion of activity data sheets and to the consequential design. On the contrary, it is vital that they will have done so. Nor does it imply that those appointed to the commissioning team will necessarily all be different from those officers who have taken part in the earlier planning, although this will often be the case in projects extending over many years.

Whatever point of time marks the beginning of commissioning, it is certainly an important point, particularly if the scheme is a large one involving a major redistribution of services. It is likely to be the point when local management embarks upon its most complex and demanding assignment. It may involve closures and the accompanying uncertainties arising from political and social interests. There may be elaborate changes affecting the organisation of clinical services. Some of the planning assumptions and operational policies will be embryonic: should any fundamental changes to these be contemplated, they should be discussed in the first instance with the chief officers of the management team. Although such changes are not normally to be encouraged during the course of commissioning, it is often the case that the passage of time and the relentless development of new techniques, new attitudes and new circumstances may *require* that the original operational policy should be amended. Whether or not operational policies remain intact, they will in any event require more discussion and work to convert strategies into systems, procedures and local solutions. From this task, the programmes for recruiting staff and for equipping soon emerge (see Chapter 4, page 33). These are just some of the challenges that mark the beginning of commissioning.

Financial considerations at this stage

Increasingly, matters of financial policy, use of resources and operational management become bound together at all stages of the planning process. The interdependence of capital and revenue is also of vital importance. The DHSS circular on the relationship between planning health buildings and the cost of running them points out that within a few years the revenue expenditure of a new hospital will exceed the cost of building it.[15] This emphasises the importance of reducing costs of labour, energy and maintenance by proper design, layout and finishes, and by getting the operational policies right.

At the outset of a major new project, there are four main financial considerations.

1 There has to be an appraisal of all the options for capital investment open to the health authority.

2 The revenue consequences of the scheme must be assessed. A revenue budget should be set and the source of this funding clearly identified before tenders are let. It is crucial, therefore, that the constraints of a district authority's revenue allocation should strongly influence

Figure 2 Reorganising services: creating a new shape from existing services

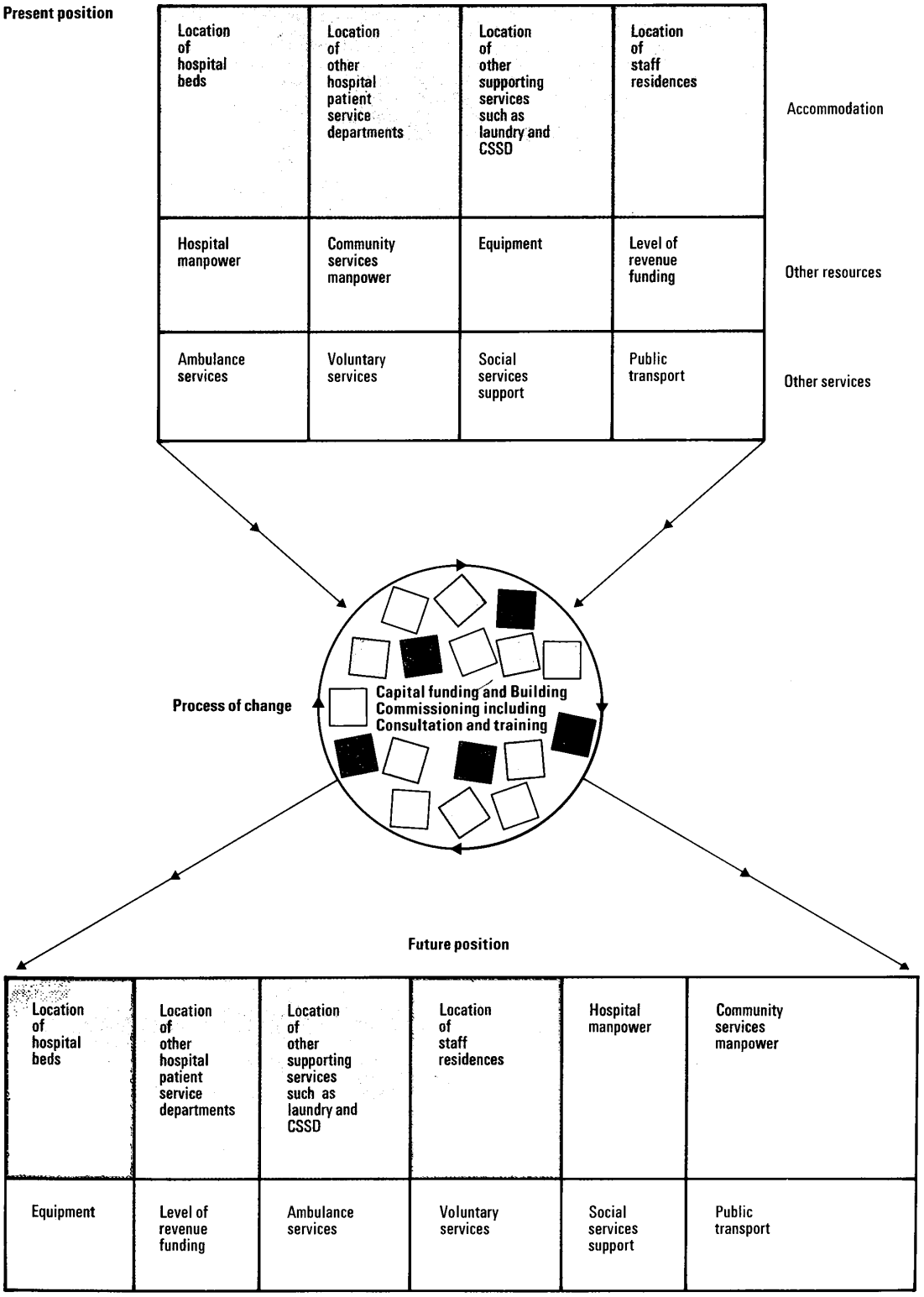


Figure 3 Transition of planning into commissioning

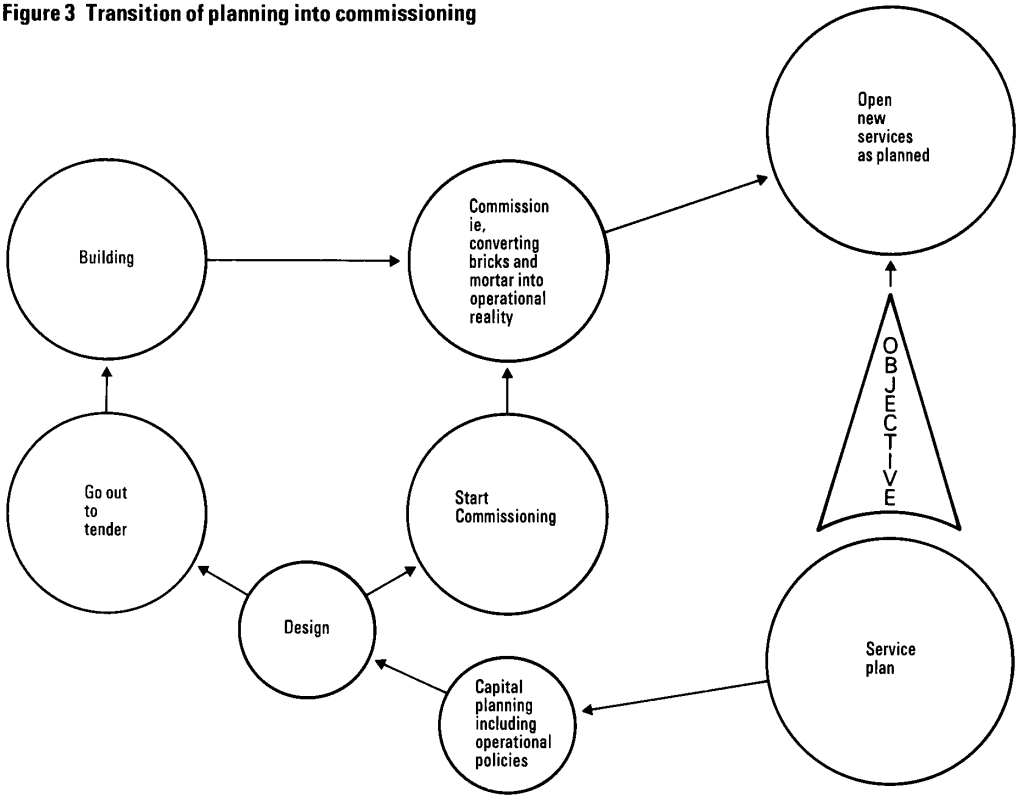
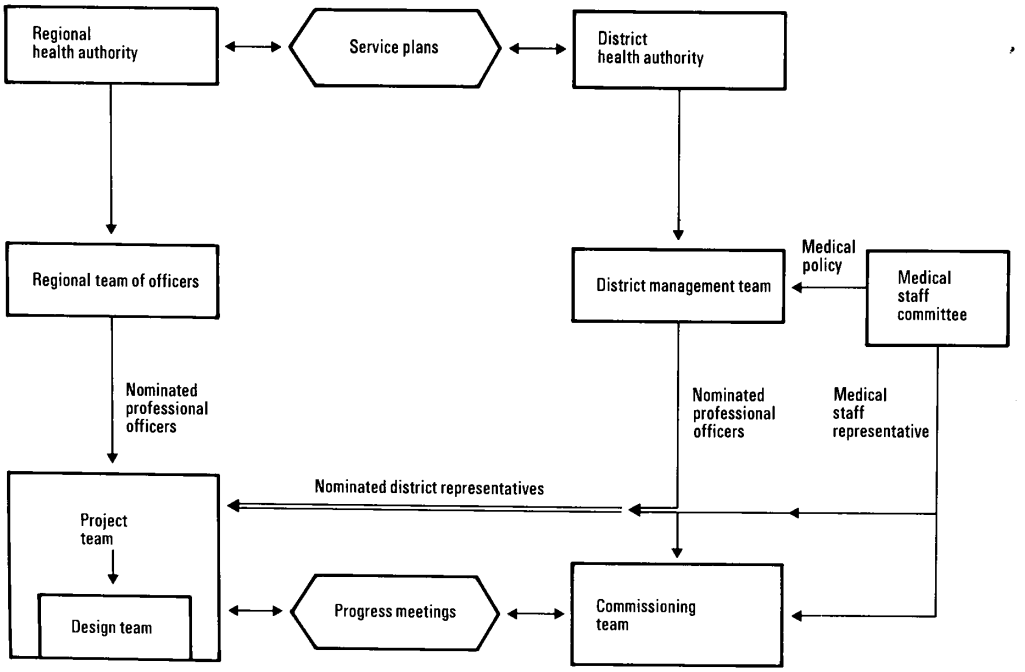


Figure 4 Organisational relationships between a commissioning team and a project team for a large building project in the NHS



the design features of the new building. The authority's own strategies about options to centralise, improve or maintain existing standards, to reduce or increase staffing levels, should accordingly be embodied in the architect's brief.

3 If the running costs of a development can be significantly reduced by marginally increasing the capital investment, every effort should be made to explore how the additional capital funds could be made available. Despite the fact the Department of Health and Social Security imposes capital cost limits, there are signs of a more flexible approach to this problem by central government and by some regional health authorities. The ability of health authorities to transfer funds between revenue and capital may assist in this respect.

4 The uncertainty of financial prediction has to be faced. It has to be recognised that there can only be limited growth in the NHS and it is unrealistic to predict with too much certainty what can be achieved five years or so ahead.

Building in phases, such as the 'nucleus' system[17], is a way of trying to adjust the amount of capital development to the availability of revenue. Even so, the ultimate numbers of staff for a new hospital and the timetable leading to opening it are likely to remain in doubt until quite a late stage unless funds for commissioning as planned can be secured and set aside. Commissioning teams have to operate within financial realities of this kind. Chapter 3 (page 25) has more to say about this.

The project team and the commissioning team

The project team is concerned with design and buildings, including the control of the capital contract, and is usually set up by the RHA.* Commissioning is a local responsibility – very much the concern of top management in the district health authority.† For major schemes, regional and district authorities should be represented on project teams. In many cases, a project team will choose to establish a design team to work up the scheme, often to present options for resolution by the project team. Figure 4 shows one model of how a project team, a design team and a commissioning team may relate during a large scheme involving two authorities, a DHA and an RHA. In a small scheme, the work of the project team and the commissioning team may be merged. In the case of a large scheme managed by one authority, say a DHA, both teams will still be required but the membership and relationships are likely to be different from those shown in the model.

*See Appendix B, page 78.
†To anticipate the reorganisation of the NHS, the text throughout refers to district health authorities (DHAs) which were replacing the area health authorities (AHAs) as this book went to press.

Further reading: see references 9, 14 and 25.

2 Establishing the commissioning team

The commissioning team will require to have regular meetings and should comprise those officers in the local organisation whose collective work will be predominant in determining whether or not the new hospital opens according to the predicted programme.

Membership

The number of members will depend partly upon the size of the project. The membership listed below would be appropriate for a large new hospital.

commissioning officer (nominated by the district administrator)

medical representative (nominated by the medical staff committee)

nurse with special commissioning responsibilities (nominated by the district nursing officer)

personnel officer

supplies administrator (concerned with the purchasing programme)

works officer (representative)

treasurer (representative)

project administrator (or representative) by invitation for schemes where there is a separate project team

Other people will be coopted at different stages. There will be a variety of tasks to be done at different times and the whole process will span two or three years or more, so the chairman of the team will have to exercise good judgment about when other senior officers should become involved. For example, although there will be one, or perhaps two, medical representatives in the commissioning team, other consultants will become involved when their departments and specialties are under discussion. Similarly, when the time of handover approaches, senior officers such as the domestic services manager, the head of portering services and the head of security, should be coopted to achieve a coordinated effort in taking over the building and preparing it for use.

The best advice is to avoid establishing a team too large for the project and wasting the time of those senior officers whose contribution towards commissioning fluctuates. However, the importance of everyone's commitment and of avoiding the team's isolation from the main administrative structure warrants an imaginative approach towards coopting people at different times. If in doubt, invite them along.

It is unlikely that the team will come together as a group simultaneously at the outset. Nor will it be necessary in a project spanning many years to allocate specialist officers full-time. So much depends upon the time-span and the size of the project. On the other hand, there must be continuity of knowledge and responsibility. These factors must be borne in mind when deciding who should represent each of the functions incorporated in the work of the commissioning team.

The coordinating role of the administrator is crucial and will become a full-time task quite early. This often creates a dilemma. It makes good organisational sense to designate the administrator of the new hospital well in advance and to appoint that person as the commissioning officer. In practice it is not always easy to retain an administrator in a post of this kind for the entire duration of commissioning a new hospital through to the first two or three years of managing it. Secondment to the district of an officer with experience in commissioning to coordinate the programme is an alternative solution. This would be recommended by those who believe that it is better to take advantage of accumulated experience than to pitch a newcomer into a job that will probably occur once in a career. Both solutions have been tried with equal success, so it would be wrong to be dogmatic. But if commissioning is regarded as a part of local management, a specialist secondment would seem to be a second best idea. Whatever the decision, it is important not to overlook the skills which are required. An unsatisfactory appointment will have an adverse impact upon the programme.

Terms of reference

What are the factors for judging whether or not commissioning has been successful? These must be considered at the outset when the terms of reference for the team are being established, bearing in mind that ultimately it is the district health authority and its district management team who remain accountable for the success or failure of what usually amounts to a major reorganisation of its service. It is the DHA and its management team who determine the main policies within which the commissioning team operates. The following terms of reference, which sharpen up objectives and tasks for a team, must not be regarded as a total delegation of responsibility.

1 To bring the hospital building, plant and equipment to a state of readiness for operational use, with appropriate numbers of staff trained to work according to the systems which, in turn, must match the design.

2 To establish a coordinated programme for equipping, staffing and opening the hospital.

3 To maintain the impetus of the programme and to avoid those delays which can be avoided. This will mean setting deadlines and monitoring progress systematically.

4 To develop operational policies into operational systems which will determine the management of the entire hospital, and which will relate to staffing and equipment requirements, to financial guidelines and to the design solution which provides the space required to fulfil the intentions.

5 To coordinate a detailed reassessment of the running costs of the new building and to contain total running costs within the limits specified in the team's financial brief. Where options exist to use facilities as planned in a more economical way, the feasibility to make such changes should be examined and, if appropriate, recommendations should be put to the DMT. If there is a possibility that the amount of revenue required to allow all services to open may not be available in full, the commissioning team will need to consider preparing contingency plans for phasing in new services to correspond with the availability of funds. The team should also prepare estimates of expenditure attributable to the commissioning process itself (see also Chapter 12, page 65).

6 To coordinate the task of completing activity data sheets (if this has not yet been done) listing equipment, specifying, ordering and receiving it, and ultimately placing it ready for use.

7 To coordinate the task of defining staffing requirements in detail, and of recruiting and training staff in time for the opening of each department. A major part of this will be to ensure that staff consultation and the implications of staff transferring from other hospitals are properly handled, within policies about any closures which have been determined by the authority.

8 To determine which other organisations will be affected by the project, and when they will be affected; to communicate with them at the appropriate time and to coordinate their contributions within the total programme.

9 To ensure good communication with the public throughout.

10 To anticipate post-contract difficulties and, in the first instance, to refer these to the project team.

11 To bring in the expertise and managerial functions of local officers and of the consultant medical staff when necessary throughout the project.

12 Towards the time of handover, to ensure commitment to a published programme of work by all the departments concerned, directed towards opening the hospital on time and in an orderly way. Experience has shown that departmental managers often underestimate the size of their task.

13 To have regard throughout for the morale of all staff likely to be affected by the project. Training, consultation and communication skills will be required.

14 To keep the DMT fully informed about progress and refer to it any matters which require policy decisions from chief officers or the authority itself. This includes putting forward any proposals for deviating significantly from the original planning policies.

It will be seen that these terms of reference can give a guide to answering the question of whether commissioning has been successful or not.

The commissioning team must have adequate secretarial and administrative support. The sheer volume of work involved in opening even a small hospital or new wing is often not appreciated until too late. Frequency of meetings will fluctuate: normally once a month will suffice but, as handover becomes closer, fortnightly and eventually weekly meetings will be necessary.

Organisational relationships

Once the work of the team is in full swing, there has to be a fine balance struck between allowing the members to be fully attached to their commissioning role and to be protected from the day-to-day problems, but not to become isolated from those who are managing the existing services. Each member must have a clearly defined managerial relationship within the district organisation, with specified individual accountability. Figure 5 attempts to place a commissioning team in the midst of a district organisation, linking with the DMT on matters of policy and with the line managers and doctors in carrying out the task of working parties and, eventually, commissioning each individual department. In no circumstances must the commissioning team become a corporate body and usurp decision-taking that properly belongs to the DMT, the medical staff committee or senior officers in line management.

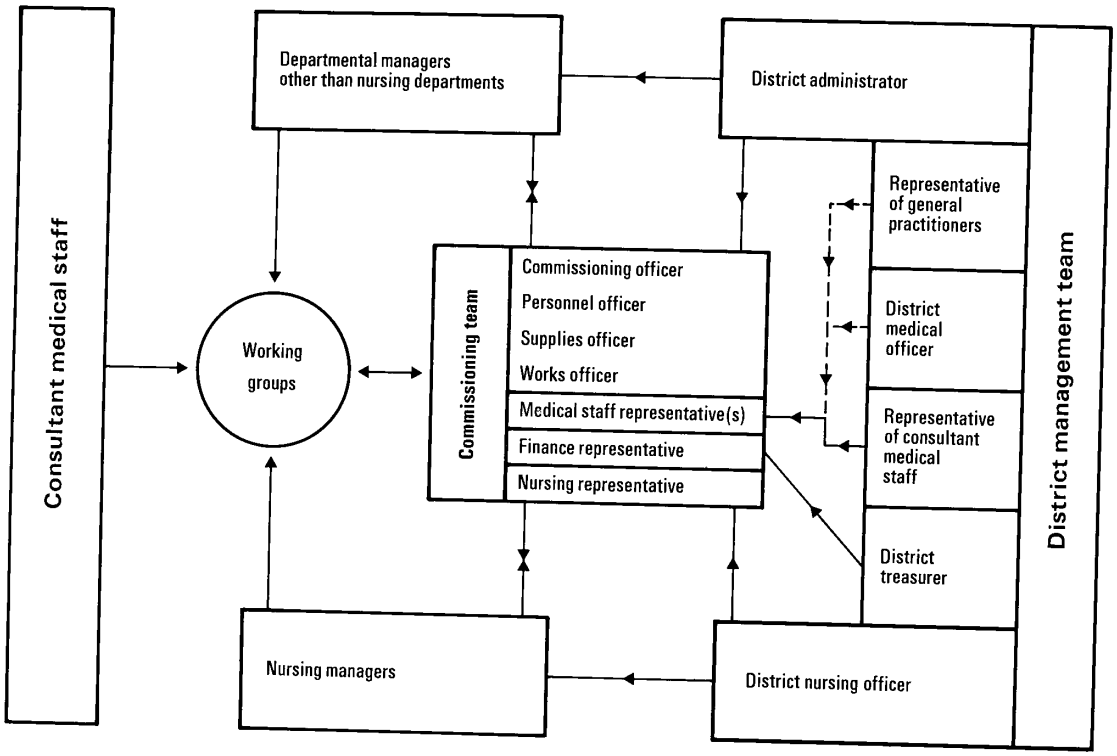
Establishing a project room

A project room is not only a place for drawings, data sheets, minutes, systems manuals, equipment and staffing schedules: it is a communications centre where the team can work together. Networks on display, mock-ups, samples of equipment and all the paraphernalia associated with a major project can be kept together. The room can also be used for meetings of all kinds, which will be required in abundance. Drawings and other data will be readily at hand.

Medical staff involvement

Doctors who will be working in the new hospital must be fully represented throughout the project. The medical member of the commissioning team has to steer the difficult course of deciding when to make decisions on their behalf, sometimes consulting them beforehand, or of suggesting cooption to obtain specialist advice. It is often advisable to have two nominated medical members to share this role. Frequent meetings are always a feature of commissioning. By keeping representation down to one or two people, communication and commitment are more effective.

Figure 5 Relationships of commissioning team members in a district health authority



In some projects, one doctor has taken on the commissioning role, not as a representative but as a full-time commissioning doctor. This may be a workable solution, given the size of the task and the importance of maintaining continuity, and it avoids the problems of trying to combine clinical sessions with commissioning. Much depends on the person chosen to do it. But the main drawback of this arrangement is that it cannot replace the truly representative role of a doctor actively engaged in the district's clinical work. All the consultant staff will need to become involved at some time, and this is more likely to be facilitated by having a representative in the team whose role will include associating with his colleagues in certain meetings and specialist working groups. In one major project, a special supporting committee of consultant medical staff was set up to advise the medical member of the commissioning team, and to help determine the wide range of medical policies embodied in the hospital's operational systems. In cases where specialist advice from consultants is not available locally (for example, it may be too early to appoint a new consultant who eventually will join the staff), this advice has to be sought elsewhere. Sometimes, the idea of making a proleptic appointment commends itself, enabling the consultant to become associated with commissioning on an occasional basis before fully terminating his present post. Contractual details of such an arrangement are not difficult to overcome.

Nursing staff involvement

Nurse administrators sometimes feel that their contribution at the early stages of a major project is often overlooked; that nurses tend to be brought in to react to plans drawn up by others, rather than to participate in their preparation.

Nursing administration has a major role in commissioning. It might be appropriate at an early stage for a senior nurse manager to be given specific commissioning responsibility, particularly in coordinating the preparation of operational systems and in advising on the staffing implications for each nursing specialty. Later, when nurse managers are appointed for each of the new nursing departments, their expertise should be exploited to the full.

Alternatively, it may be justifiable managerially and financially to appoint an additional specialist commissioning nursing officer. In deciding whether or not to do this, questions to be weighed are similar to

those discussed in relation to the commissioning administrator, except that his coordinating role is a large task in itself. Many large projects, such as that in Southampton[31], have found it valuable to engage a specialist nurse, initially for manpower planning and for determining broad nursing policies, working under the direction of the district nursing officer. Subsequently, the commissioning nurse can guide and support line nursing managers in determining departmental systems and nursing procedures, and can help select equipment and prepare manuals. The specialist nurse becomes the obvious choice to join the commissioning team, and to assume responsibility for arranging appropriate nursing representation at all meetings and working groups associated with the project.

Tasks for departmental managers

All other senior staff, mainly the heads of departments, have to be involved in the commissioning process. This, just like medical and nursing involvement, requires thinking out and devising organisational solutions. There can be difficulties when, for example, the required ability or the forward-looking approach is missing in a department. If some new heads of departments are to be recruited, and their advice is needed, how can this be done without making appointments prematurely? Judgment about using local officers or seeking help from other sources, and about whether, or when, to appoint new heads of departments are likely to require policy decisions by the district administrator or the DMT. Again, proleptic appointments sometimes help. Alternatively, if a new head of department is appointed well in advance of opening the new hospital, other managerial tasks can be undertaken, such as taking on temporary managerial responsibilities in other hospitals or clinics. The very nature of commissioning gives rise to peaks of workload, followed by troughs which sometimes need to be filled ingeniously to widen the role of the person appointed to manage the eventual new department. Heads of departments become – as it were – commissioning officers for their own services, with leadership and coordination coming from the commissioning officer. Thus, the overall task is shared amongst a large number of managers and commissioning is integrated with line management. Some senior staff, in order to respond to this new responsibility, may find it useful to widen their experience and learn about the latest practice by visiting other new hospitals.

Checklists of task to be done by heads of departments at the early stage of commissioning will include the preparation of operational systems, completion of activity data sheets, checking planning assumptions about workload, and devising organisational structures based on the original manpower plan.

Finance

Management and money are indivisible in most contexts, and certainly this is so in commissioning. The team cannot operate effectively without a clear financial brief. On the one hand, there will be revenue constraints within which the team is expected to work and, on the other hand, the team will have latitude to commit the DMT to certain expenditure when decisions are being made about operational systems, specification of equipment and staff recruitment programmes. The next chapter gives guidance on what financial brief might be stipulated and what tasks this will entail.

Training

Most senior officers involved in commissioning only experience it once in their careers. Consequently, there is some learning to be done. At the stage of setting up the team and establishing associated roles for other senior people, visits to other new hospitals and locally organised seminars will be valuable. There are tape-slide training kits about the DHSS equipment system. A day's course on networking, and another on reading and understanding architects' plans, should be arranged locally. The Scottish Hospital Centre's excellent reference pamphlet, *An Introduction to Reading Architects' Drawings*, is well worth putting in the project room for early reference. Those involved in smaller commissioning schemes, may find Appendix C (page 81) of sufficient help.

Understanding how commissioning fits into the DHSS capital planning system (Capricode) is also important. Appendix D (page 85) briefly explains this, but a short seminar with members of the project team would help to ensure that those engaged in planning and in commissioning work together and clarify their respective roles.

Commissioning set to go

All this preparatory work is essential if the workload of commissioning, and responsibility for it, are to be shared out extensively. The following checklist summarises what should have been achieved by now.

1 SET UP THE TEAM: DECIDE ABOUT COOPTION AND HOW MEETINGS WILL BE ORGANISED.

2 ESTABLISH ACCOUNTABILITY OF TEAM MEMBERS AND LINES OF RESPONSIBILITY WITHIN THE DISTRICT.

3 ESTABLISH OBJECTIVES FOR THE TEAM.

4 ESTABLISH LINKS WITH THE PROJECT TEAM.

5 ESTABLISH A PROJECT ROOM.

6 CLARIFY ASSOCIATED COMMISSIONING ROLES OF OTHER SENIOR STAFF.

7 IDENTIFY REVENUE CONSTRAINTS WITHIN WHICH THE TEAM IS EXPECTED TO WORK, AND SEEK A FINANCIAL BRIEF FROM THE DMT.

8 ARRANGE TRAINING FOR TEAM MEMBERS.

Further reading: see references 4, 7, 19, 22, 24, 30 and 39.

Phase II The Building and Preparation Period

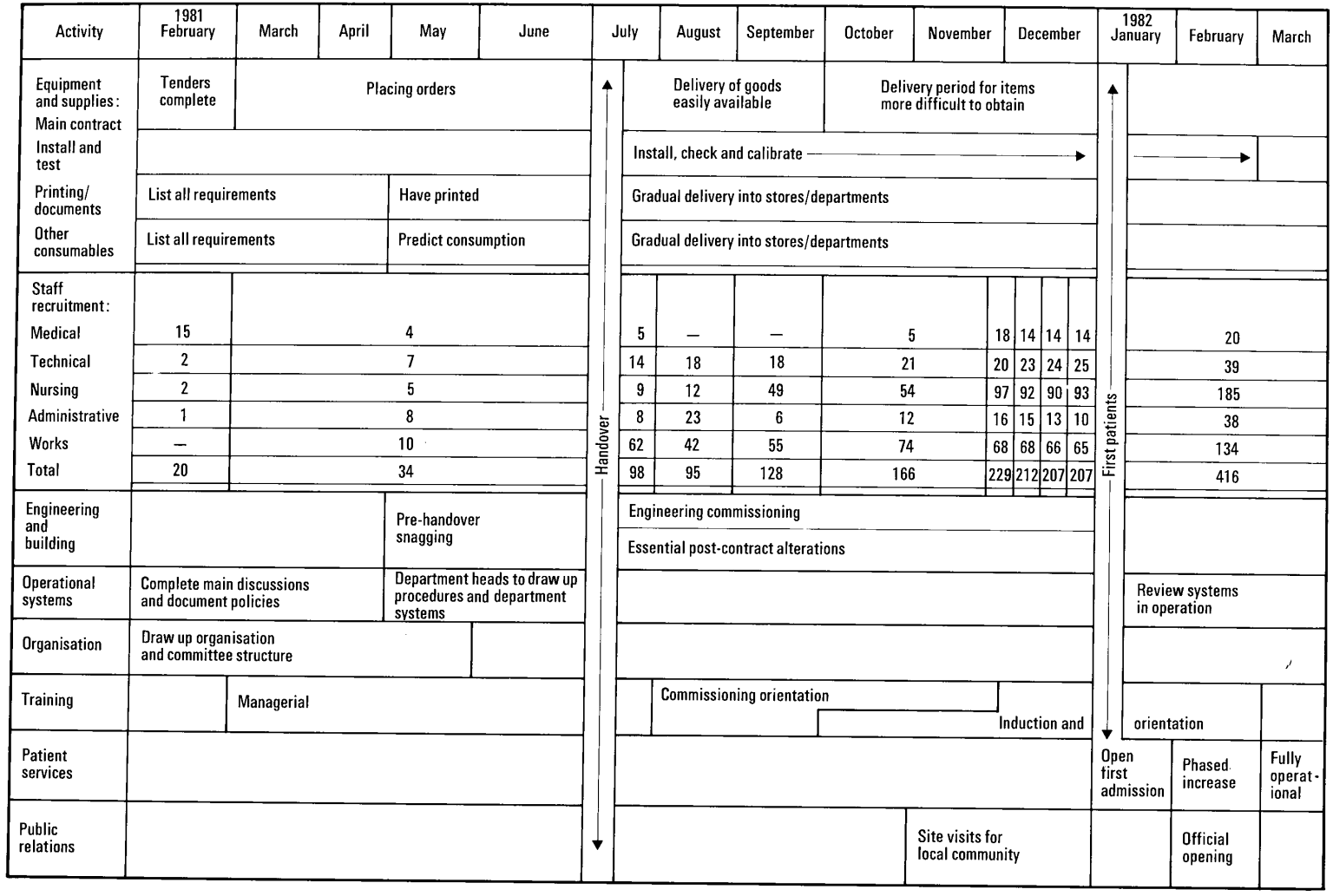


Figure 6 Example of a commissioning timetable for an overseas hospital

3 Managing the commissioning programme

Control plan

To manage the commissioning programme efficiently, the team will require a control plan. Initially, this can be a simple bar chart, such as Figure 1 (page 10), which will show the shape of the overall task and its immediate organisational implications, for example on the advance appointment of a few key specialist officers. Figure 6 is an example of a more detailed plan, from which more precise programmes can be developed for the separate activities of preparing operational systems, planning the equipment programme, recruiting the staff and conducting a programme of public relations. These are the four main elements in every commissioning programme.

Techniques of programming

Commissioning teams for large schemes can learn much from network specialists and should take the initiative to obtain this help. In the National Health Service, this is usually available from the regional management services section. Critical path analysis is simple in conception and flexible in application. What are its benefits?

1 Critical activities are identified early.

2 If the first assessment of the time required to complete the project is unacceptably long, the network will show where additional resources need to be applied to reduce the duration.

3 The logical sequence of administrative work becomes clear.

4 It shows where delays are permissible and where they are not.

5 Essential deadlines become evident.

6 Changes to the programme and their effects can be dealt with more confidently.

7 The vast number of interdependent and complicated activities that make up the total task just cannot be put into an orderly programme without the help of a diagram of some kind.

8 It can allocate every principal activity to an accountable officer and draw attention to deadlines in devising operational systems, completing equipment schedules and appointing staff.

9 It can be used with or without a computer. For very large schemes, a computer facility is an asset but for those of medium size it is probably equally satisfactory to manage without. For smaller projects that are not too complicated, less sophisticated control systems not even requiring specialist help are usually adequate.

10 Once the system is set up, it only requires half a day or so every month to update it.

11 The most important benefit is that in drawing it up all the main activities that have to be dealt with can be identified.

A brief explanation of critical path analysis is given in Appendix E (page 86), and a sample of a network used in commissioning the Greenock District General Hospital is reproduced in Figure 8 towards the end of this chapter, page 30. The print out (Figure 7) shows how a computer system used for Queen's Medical Centre in Nottingham helped to schedule individual tasks and produced information which the commissioning team could use to monitor progress by individual managers.

Problems of phased schemes

Phasing, a common feature of major projects, and the options available in a phased scheme, are not always given the careful thought they require. The nature of the site, recruitment rate predictions, the funding of the scheme, the local priorities for introducing new services, and the practicalities of having certain buildings ready before others, will all influence whatever is finally decided. For example, in some schemes staff residences might be regarded as essential for recruiting sufficient numbers of staff to open new departments. But there might be good reasons why these cannot be the first buildings to be handed over. If this is so, management has to make temporary arrangements with local hotels or convert other accommodation for residential use. Another common feature of phased schemes is the need to provide temporary arrangements for certain departments in earlier phases of the building until the permanent location is available. This is sometimes called the 'decanting programme' which, in itself, can become a complex administrative task, with implications for equipping, telephone services, signposting and similar matters of detail. Sectional completion, which in effect is an early handover within a phase, is sometimes arranged under the contract. If this is done, careful thought has to be given to problems of accessibility, use of lifts in a multi-storey building, security and other contractual matters.

The community served by the new building will be particularly interested in the reasons for phasing. People will want to know why a certain long-awaited service has to be deferred until the last phase. They may have to endure for some time difficulties with car parking. They may suffer inconvenience if patients have to be frequently transferred between the new and the old hospital until all new services for inpatients are commissioned.

The availability of capital and revenue funds usually determines the main decisions about phasing. Whereas

certain temporary arrangements are practicable and acceptable for a short time, a long gap between phases may rule out certain options. Now that half the major projects in the NHS are being designed in accordance with the nucleus principles of planning, phasing and its problems have to be frequently faced up to by commissioning teams.

Predicting the programme and reviewing it: critical factors

The components that make up the commissioning machine are numerous and vary in size. As in a vehicle, the small ones are often the most essential and the most expensive. Any damage to one part can bring the whole machine to a standstill. It is, therefore, imperative that the expected completion date of the building, to which the whole of the commissioning programme is geared, is calculated as accurately as possible. This is not easy: completion is dependent on the efficiency of the contractor and subcontractors, weather conditions, unexpected site difficulties and delivery of materials. Experience has shown that completion of large building contracts can be delayed by several months or more.

Prediction of each element in the programme is an imperfect skill. It has to be done after consulting all those concerned with implementation, and then it has to be reviewed systematically throughout the project. Appendix F (page 88) lists some unexpected problems that caused last-minute delays in commissioning programmes during the last few years. It includes a few lighthearted examples which show the need for a flexible approach in facing up to the unpredictable elements of commissioning and the value of a sense of humour sometimes.

If good fortune ever allows time in hand, good use can always be made of it. The commissioning team should never lose sight of the fact that no private property developer in his right senses leaves his investment to amble into use. The realisation of capital building is equally important in public development. The commissioning officer, therefore, needs to regard the task as a long-distance race against the clock. Every lap makes demands on the team; some laps have to be taken at a faster pace than others, and towards the end warning bells have to be sounded to make that effort for the final run-in.

Financial aspects of commissioning

The commissioning team must know its financial brief, both the constraints and the task, and must understand that the commissioning programme eventually has to fit the financial circumstances of the time, not the other way round. The ideas and plans of the team have to be fully integrated with the decision-making processes of the district. The role of the team in this respect and its level of responsibilities will vary from one district to another. The following example will only apply to certain schemes.

Financial brief for a commissioning team

1 The team is required to reassess the revenue costs of the new building, identifying separately

a the additional revenue costs of transferring existing services at current levels and standards of workload; these costs can conveniently be called the 'level transfer' costs, and

b the revenue costs of each expansion or improvement in service within the new building, to be termed 'development' costs.

2 These revenue assessments should show the estimated cost to each departmental budget in the district, set against carefully calculated workload predictions.

3 Revenue costs should be kept to a minimum commensurate with maintaining reasonable standards of care. The team should be able to explain the reasons for each element of increased cost.

4 The team should give priority to effecting the 'level transfer' of existing services into the new building. The DHA is planning to make an additional £x per annum available to finance this transfer and the revenue costs should therefore be contained within this budget.

5 The commissioning team should ensure that anything that can be defined as an optional improvement or development is separately identified and costed. The DHA is planning, on current resource assumptions, to provide £y per annum to finance developments in the new building as specified in the most recent district plan. Any other development proposal should be costed and will be considered for funding alongside all other developments proposed elsewhere in the district.

6 The team is expected to work to the above guidelines about revenue growth. The team should, however, prepare contingency plans to cope with the possibility that on the initial commissioning of the building the amount of revenue available may be less than currently planned.

7 The team should ensure that the revenue consequences of purchasing the proposed equipment are accurately calculated.

8 Managers should be prepared for detailed testing of both their manpower plans and their proposals for increasing non-staff budgets.

9 It should not be assumed that funds will be forthcoming to undertake post-contract work which the team considers desirable. Where such work is the responsibility of the district and funds are available, the DHA is likely to give priority to

a jobs where 'once off' expenditure will result in significant recurring revenue savings,

b jobs which must be done to enable a department to become operational.

10 The team is expected to prepare schedules of equipment for each department within the capital cost limits set by the RHA in the case of major projects, or by the DHA for smaller delegated schemes.

1900 SERIES PERT 4/0 26/01/81 OUTPUT SHEET NUMBER 47

PROJECT QM QUEEN,S MEDICAL CENTRE PH2(COMMISSIONING) RUN 1 TIME-NOW 29DEC80 PAGE 2

PREC EVENT	SUCC EVENT	REPORT CODE	DESCRIPTION	DUR	EARLIEST START	EARLIEST FINISH	LATEST START	LATEST FINISH	TOT FLOAT	FREE F FLT
ECG180	ECG230	SA2	DETERMINE P.P.M. POLICY	1,0	29DEC80T	5JAN81	20MAR81	27MAR81	11,4	26,0
ECG185	ECG190 A	E02	SUBMIT SCHEDULE TO RHA	4,0	29DEC80T	26JAN81	19SEP80	17OCT80	-14,1	0,0
ECG185	ECG190 B	E02	EQUIPMENT TRIALS	2,0	29DEC80T	12JAN81	30CT80	17OCT80	-12,1	2,0
ECG185	ECG190 C	CT	DETERMINE MAINTENANCE POLICY	3,0	29DEC80T	19JAN81	26SEP80	17OCT80	-13,1	1,0
ECG190	ECG195	E02	FINAL SCHEDULE PREPARED	2,0	26JAN81	9FEB81	17OCT80	31OCT80	-14,1	0,0
ECG195	ECG200	E02	COMMISSIONING COMMITTEE APPR	7,0	9FEB81	30MAR81	31OCT80	19DEC80	-14,1	0,0
ECG200	ECG210	E02	ORDER LONG DELIVERY ITEMS	2,0	30MAR81	13APR81	19DEC80	2JAN81	-14,1	0,0
ECG205	ECG230	CT	PREPARE ALTERATIONS SCHEDULE AND IDENTIFY FUNDING	4,0	29DEC80T	26JAN81	27FEB81	27MAR81	8,4	23,0
ECG210	ECG215 A	E02	ORDER STANDARD ITEMS	2,0	13APR81	27APR81	9JAN81	23JAN81	-13,1	1,0
ECG210	ECG215 B	E02	ORDER TECHNICAL EQUIPMENT	3,0	13APR81	4MAY81	2JAN81	23JAN81	-14,1	0,0
ECG210	ECG215 C	E02	ALLOCATE INITIAL STORAGE AREA	2,0	13APR81	27APR81	9JAN81	23JAN81	-13,1	1,0
ECG215	ECG220	E02	DELIVERY OF EQUIPMENT	6,0	4MAY81	15JUN81	23JAN81	6MAR81	-14,1	0,0
ECG215	ECG230	E02	FIX GROUP 2 ITEMS	4,0	4MAY81	1JUN81	27FEB81	27MAR81	-9,1	5,0
ECG220	ECG230	E02HOD	UNPACK & CHECK EQUIPMENT	3,0	15JUN81	6JUL81	6MAR81	27MAR81	-14,1	0,0
ECG230	ECG235	CT	ENSURE ALTERATION COMPLETE	3,0	6JUL81	27JUL81	10APR81	1MAY81	-12,1	0,0
ECG230	ECG238	E02HOD	INSTALL & PLACE EQUIPMENT	3,0	6JUL81	27JUL81	27MAR81	17APR81	-14,1	0,0
ECG230	ECG240	SA2	APPOINT DOMESTICS AND COMMENCE CLEAN	1,0	6JUL81	13JUL81	24APR81	1MAY81	-10,1	0,0
ECG230	ECG245		DUMMY	0,0	6JUL81	6JUL81	17APR81	17APR81	-11,1	0,0
ECG235	ECG255	GAA	ENSURE SIGNPOSTING COMPLETE	2,0	27JUL81	10AUG81	1MAY81	15MAY81	-12,1	2,0
ECG238	ECG255	E02HOD	TEST EQUIPMENT	4,0	27JUL81	24AUG81	17APR81	15MAY81	-14,1	0,0
ECG240	ECG255	SA2HOD	CONTINUE ROUTINE CLEAN	2,0	13JUL81	27JUL81	1MAY81	15MAY81	-10,1	4,0
ECG245	ECG250 B	SA2HOD	DUMMY RUNS ALARM TELEPHONE & INTERCOM TEST	2,0	6JUL81	20JUL81	17APR81	1MAY81	-11,1	0,0
ECG250	ECG255 A	SA2HOD	INFORMATION TO SUPPORTING DEPTS	2,0	20JUL81	3AUG81	1MAY81	15MAY81	-11,1	3,0
ECG250	ECG255 B	SA2HOD	OBTAIN SUPPLIES & CONSUMMABLES	2,0	20JUL81	3AUG81	1MAY81	15MAY81	-11,1	3,0
ECG255	ECG260	SA2HOD	EVALUATION	0,0	24AUG81	24AUG81	24AUG81	24AUG81	0,0	0,0

Figure 7 Example of a computerised print out of commissioning tasks

11 Once financial policy has been set, staff transfer and recruitment programmes should be worked out to keep within the prescribed limits of revenue forecasts.

It is clear from a brief of this kind that commissioning a new hospital in a health district in the NHS is going to be more difficult during the next few years than used to be the case. There are more uncertainties, and fewer opportunities, to allow a new hospital to expand or improve services. Ideally, the commissioning task is eased and speeded up if there are financial reserves to put things right, to deal with oversights in equipping or to provide extra staff if workload exceeds expectation. Obtaining maximum return as quickly as possible from capital investment is the best strategy if there are no revenue constraints preventing this. The guidance in this book does not, therefore, entirely rule out the possibility and merits of providing commissioning reserves. It can be argued that the commitment of opening a new hospital carries with it some unavoidable overheads that must be faced up to if the job is to be done efficiently. For example, the cost-effectiveness of the entire building is unlikely to be realised unless it becomes fully operational fairly quickly: many supporting departments will have to be proportionately overstaffed if some services are not opened to their utmost capacity. More is said in Chapter 12 (page 65) about the need to prepare estimates of non-recurring expenditure associated with the peak time of recruiting extra staff and preparing the building for use.

It must be evident that this financial brief for a commissioning team is a major part of its task. The distinction between 'level transfer' and 'development' will determine many of its decisions. And the team will have to be aware that a new project invariably generates different patterns of expenditure than those incurred by existing buildings. The following list gives a few examples where this may happen.

1 Changes to the availability of clinical resources; for example, clinics, theatre sessions, day hospital places, the precise number and designation of beds. Sometimes these may only appear slight but financially they may be quite significant.

2 Design features requiring greater expenditure: such as upkeep of lifts; air-conditioning plant (running costs and maintenance); larger buildings requiring more heating, cleaning and maintenance; ward layout requiring more nursing staff.

3 For a while there may be revenue costs incurred by maintaining new and old buildings at the same time. Conversely, once an old and uneconomic building is closed, there may be some financial advantage to offset against new commitments.

4 Supporting services, such as investigational departments containing new technology, may be used more extensively, and at greater cost.

5 Distances between departments may be greater and may require more portering and transport services. These may be partially offset by mechanisation.

6 New equipment may generate greater expenditure through the use of consumable goods.

Formation of working groups

A commissioning team will recognise very quickly that managing the programme efficiently depends largely on coordinating the work of other senior officers and consultants. Much of this needs to be done in separate working groups. In some projects, the generic term 'user-group' is adopted, but this is misleading because it implies too passive a role. Working groups are essentially managerial and are concerned mainly with systems. Advice about membership cannot be too specific, but some general principles apply. The groups need to combine those who ultimately manage the operational systems and those who are directly affected by services provided by others. Their deliberations will ultimately determine the organisation of the hospital, the choice of some of its equipment and, in many cases, the staffing structure of a department. Most groups will be multiprofessional; many will benefit from nursing and medical representation.

To begin with, the commissioning team must decide what groups are required and then set up each one according to a logical sequence whereby those with the longest task are amongst the first to get under way. A network showing the deadline to be met by each group is an essential part of the team's system of control. The list opposite gives an idea of the range of the working groups required in most major projects, and includes some suggestions about their membership. The list is not comprehensive: membership needs to be flexibly arranged depending on the size of the project. Administrative support will often be useful to convene the meetings, to record decisions, to 'cross-fertilise' discussions from one group to another, and to keep up the momentum of the work.

In a few cases, the working groups may not change their membership when the task of selecting equipment has to be carried out. However, as the groups will have been principally concerned with policies, procedures and systems, different groupings of officers are required later in the commissioning programme to specify and select equipment. The commissioning team, therefore, also has to monitor the work of equipment selection teams, which are referred to in Chapter 6 (page 00). Examples would include separate teams to choose ward furniture, residential furniture, engineering and building tools, theatre instruments, laboratory equipment, office furniture, anaesthetic equipment, chapel furnishings, cleaning equipment and so on. Each one eventually has to be set up, with the supplies officer coordinating the overall task, but with deadlines set by the commissioning team. A network will also be required to programme this work.

Membership of working groups

Scientific and remedial services

Clinical chemistry	M and Sc with administrative and supplies cooption
Dietetics	HD, M, N with catering cooption
Haematology	M and Sc with administrative and supplies cooption
Histopathology	M and Sc with administrative and portering cooption
Microbiology	M and Sc with administrative and works cooption
Occupational therapy	M and R with administrative cooption
Pharmacy	Ph, M, N and A
Physiotherapy	M and R with administrative cooption
Radiology	M, R and A with nursing cooption
Speech therapy	M and R

Administrative and hotel services

Catering	HD and A with nursing, supplies, portering, dietetic and domestic cooption
Domestic and linen services	HD, N and A with cooption for off-site laundry services
Medical records and data-processing	HD, M, A and computing staff with nursing cooption
Portering and internal transport	HD and A with nursing cooption
Security and fire precautions	HD and A with works and nursing cooption
Sterile supply services	HD, N, M with microbiology, supplies and administrative cooption
Supplies, stores and distribution systems	HD, A, N with portering cooption
Telephones and associated communications	HD and A

Nursing and clinical departments

Accident and emergency services	M, N and A with radiology cooption
Day care	M, N and A
General wards	M and N with cooption of many heads of departments
Intensive therapy	N and M (to include surgical, medical and anaesthetic staff)
Maternity	M and N with administrative cooption
Operating theatres	M and N with portering, cleaning, works and sterile supply cooption
Outpatients' department	M, N and A (to include medical records officer)
Psychiatric services	M, N, R and A. Other HDs to be coopted including occupational therapy and medical records

A	administrative staff
HD	head of department
M	medical staff
N	nursing staff
Ph	pharmaceutical staff
R	remedial or radiographic staff
Sc	scientific staff

Commissioning checklists

There is always concern throughout a commissioning project that something very important will be left to the last moment or will be entirely overlooked. To help reduce this worry, checklists are useful in making sure that decisions affecting the principal activities of the hospital are dealt with. Similarly, each departmental head will find it useful having his own checklist of managerial tasks, with target dates set by the commissioning team to fit the overall programme. Appendix H (page 97) provides a schedule that might be useful for those devising operational systems, but it should only be regarded as a starting point. There will always be a wide range of subjects peculiar to each scheme. Three examples of variations which will only apply to certain developments are: the work of a highly specialised unit; policies where there is a relationship with other local hospitals when, for example, a new centralised service is being provided; the establishment of an ethical committee, which may require some new managerial ground to be broken, even though it may not affect the design or staffing of the building.

Management of smaller commissioning projects

Many senior officers in the health service become involved with smaller projects, such as extensions to departments, community clinics or health centres. The need to establish a commissioning team to undertake tasks similar to those of a large project is equally important for achieving success. Much of this book's guidance is relevant to smaller projects but it needs to be interpreted to suit a smaller scale. The following sequence of administrative action may often apply.

1 Establish a small commissioning team, with a coordinator to programme its work.

2 Draw up the functional content of the scheme and document the principal operational policies, which should include estimates of workload.

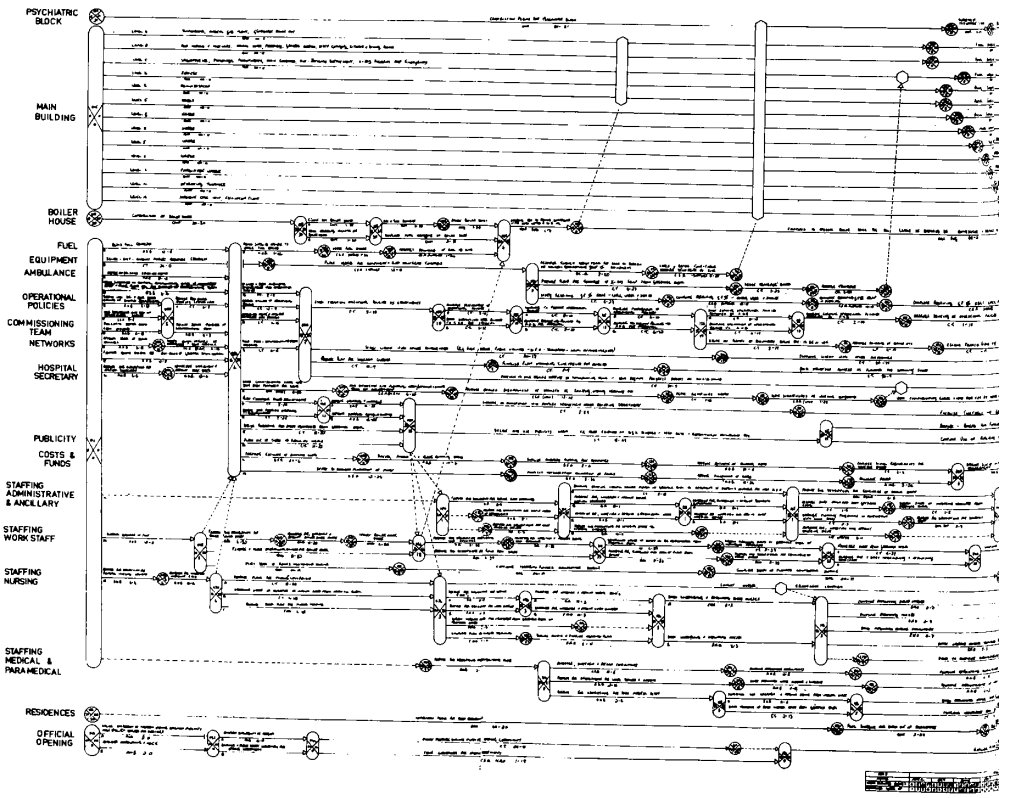
3 List the staffing requirements and include these in a reappraisal of the scheme's revenue consequences. These normally will have already been incorporated in the district's operational plan.

4 Complete activity data sheets for each room and circulation area. (Appendix G, page 90, gives some advice on this task for projects in which ordinary room data sheets would be adequate.)

5 Consider any consequences of the scheme for other services; both those directly affected, such as cleaning, and those which may be less obviously concerned, such as telephones or transport.

6 Draw up a control plan showing the major tasks and the timetable for these to be accomplished up to the time of opening.

Figure 8 Network analysis of the Greenock project



7 Consider any operational systems that need to be devised. (The last part of Appendix H, page 97, may be useful to refer to, if the project concerns a community clinic.)

8 Prepare equipment schedules and check their cost against previous estimates or against any financial limits that have been set.

9 If the scheme involves a significant transfer from another hospital or community clinic, staff consultation and other administrative tasks explained in Chapter 9 (page 53) should be undertaken.

10 By this stage, it is likely that the design will have been completed, and that a decision has been made to go out to tender. The successful contractor will need to know how to gain access to the site of the project, and where to store materials. There may also be some security factors to be considered.

11 The next stage is equipment specification, which might coincide with the start of building. The team will need to programme this activity, which will be dependent on the times of delivery of supplies and the duration of the building contract.

12 The target date for opening should be reviewed once the building work has started.

13 Ordering supplies is likely to be the next task to be programmed to fit the latest timetable for opening.

14 There may be additional staff to recruit.

15 Snagging and engineering commissioning will occur towards the time of handover.

16 Handover.

17 Installation of equipment.

18 Staff training and trial runs (if necessary).

19 Press coverage may be appropriate.

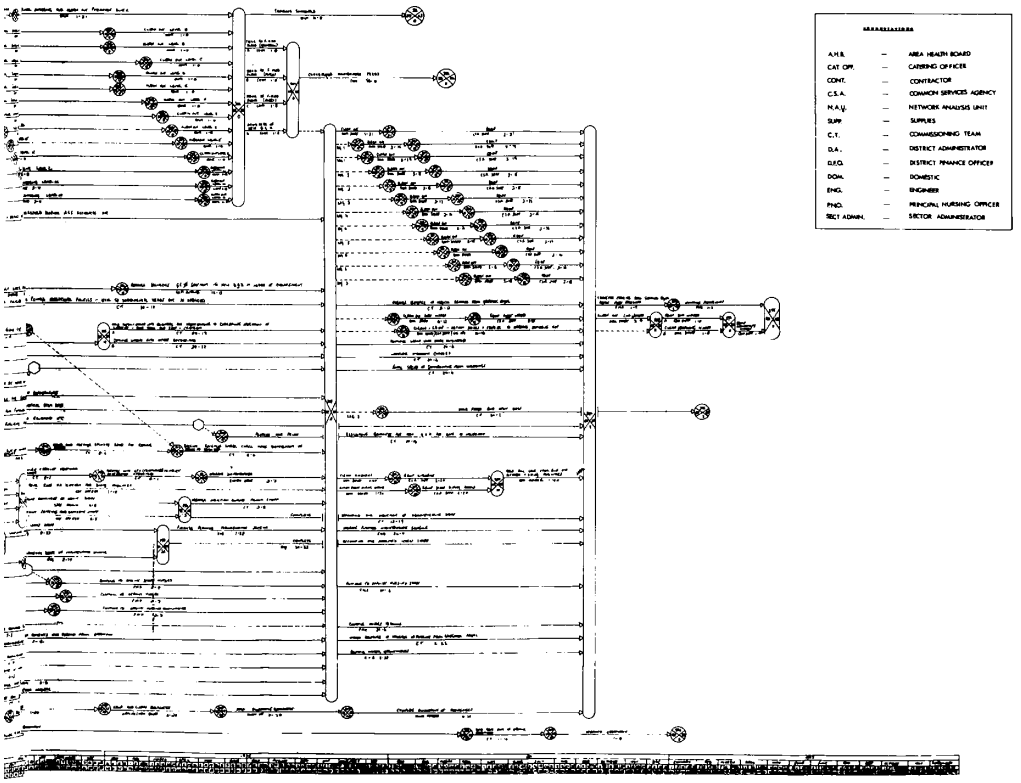
20 Opening the new service.

21 A small-scale opening ceremony may be appropriate.

Summary of main responsibilities

The following list should be regarded only as a selection of the commissioning team's principal responsibilities. These are amplified in the remaining chapters in Phase II.

1 Draw up and publish a commissioning control plan and monitor its progress. In due course, develop more detailed networks itemising the main tasks to be accomplished by each manager involved in the scheme. (An example of a network used in the Greenock project is shown in Figure 8, below.)



2 Establish a financial brief and carry out the tasks within this.

3 **Operational systems** Define accountability for completing their preparation. Set up working groups to assist managers to prepare the operational systems. Ensure that these are produced according to a timetable and are documented in a uniform style.

4 **Equipment and supplies** Coordinate the completion of activity data sheets, unless these have been done. (If they have been, they may still need to be checked.) Set up a programme for scheduling, ordering and receiving equipment. Establish selection teams to specify equipment within prescribed cash limits.

5 **Personnel management** Ensure that, within the overall timetable, the personnel programme is properly planned, and that it includes staff consultation, recruitment and training.

6 **Public relations** Prepare a public relations campaign and incorporate this into the programme.

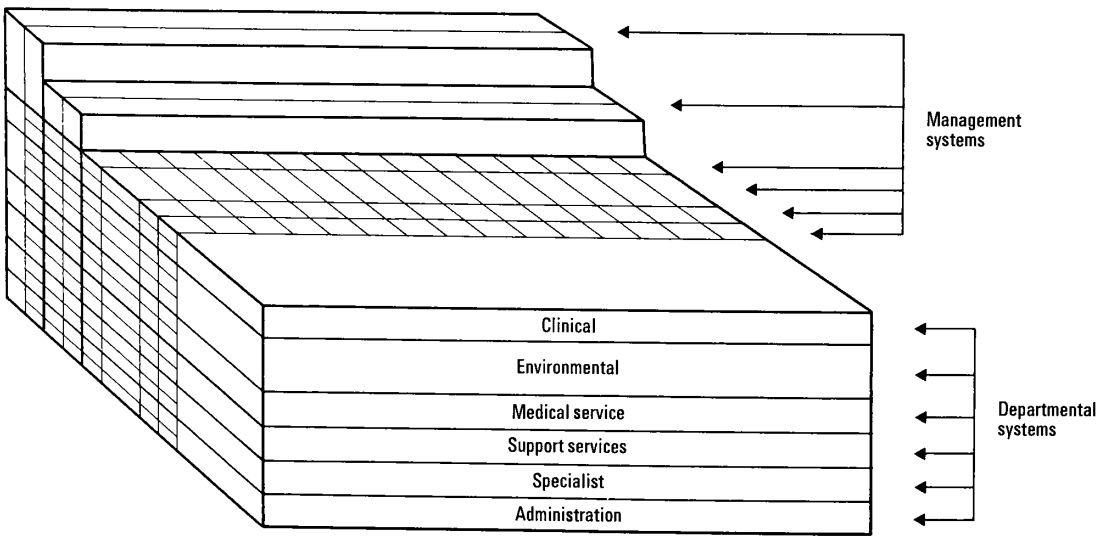
7 Consider the implications of closures or transfers, both of which are likely to concern the four main components: operational systems, equipment and supplies, personnel management and public relations.

8 Refer to the district management team or its principal officers at the earliest possible time any matter requiring a policy decision outside the scope of the commissioning team itself.

9 Towards the time of handover, intensify the team's coordinating role by coopting other senior officers to attend certain meetings, maintain close liaison with the work of the commissioning engineer and meet more frequently.

Further reading: see references 1, 3, 23, 27, 33.

Figure 9 Relationship between management and departmental systems



4 Operational systems

The significance of operational systems

The preparation of operational systems is the most important task in the entire commissioning process. It is up to the commissioning team, within the brief set by top management, to decide how this should be tackled, to determine the intended use of operational manuals, to define accountability for meeting deadlines, and to recommend a standard format.

There is a distinction between **operational policies** – a well established term – and **operational systems** – a comparative newcomer to planning vocabulary. It is unfortunate perhaps that two quite separate families of documents have to be produced which are so similar in name and purpose. This partly reflects the evolution of planning into commissioning and the time span through which so many different decisions have to be taken.

Operational policies can be defined as a statement of the objectives and principal functions for each department, drawn up mainly to provide the architect with an adequate brief at the initial design stage. An operational policy is, of necessity, basic. It is primarily an outline of the eventual operational system, and it provides the users with ample choice as to how each department will eventually run.

Operational systems are drawn up much later and therefore have to fit into the design and the constraints set up by earlier planning decisions. This understandably can frustrate local managers – the users – who would like to have more latitude to promote their own latest ideas for running their departments. Despite this limitation, normally there is ample scope in a new building for innovation and for changing all aspects of the organisation for the better. The main purpose of operational systems, therefore, is to develop intensively the original operational policies in order to fashion the way the hospital will ultimately operate. Many systems will determine what equipment should be obtained, how each form will be printed, how each staff member is to be deployed, and what standard of service will be provided to patients. Significantly, they will also affect the running costs of the hospital, and will clarify managerial responsibility where in the past this has been left vague. An operational system is a way of magnifying the intended use of each department until every detail becomes clear. The operational systems checklist for a large project in Appendix H (page 97) gives an indication of the range of subjects to be discussed in this way. It is not intended to be comprehensive: a more detailed analysis of a hospital's organisation would be required to produce a complete list, but it offers commissioning teams a good start in itemising just how many topics have to be considered, and highlights those systems which might impinge on staffing structures or the specification of equipment.

For those involved in nucleus development there exists a set of hospital and departmental operational policies on which the design is based.[13] The implications of these policies on those of the district, or of the 'host' hospital in the case of a redevelopment, have to be thoroughly assessed before making a start on the process of drawing up operational systems.

Classifying management systems and departmental systems

Classification can be done in many different ways. The method adopted for Northwick Park Hospital some years ago has stood the test of time and is described below. This is just one example of how it might be done. The starting point is to divide the activities of the hospital into two groups: **management systems** which determine the operation of the hospital as a whole (for example, control of infection, or personnel management); and **departmental systems** which affect individual departments. Within these two groups, there will be subsets of small systems; for example, the tracer procedure in the medical records department or staff records in the personnel department. Figure 9 shows the way management systems cut across the entire organisation, whereas departmental systems are largely self-contained.

Management systems

Management systems form the framework of the hospital's organisation within which the working of each department can then be defined. These can be arranged into different 'families'.

Principal objectives of the hospital

Management organisation: structure and accountability

Medical policy and organisation

Patients' services: policy and organisation

Public relations

Communications

Financial policy and accounting

Management information

Personnel

External relationships

Property and use of accommodation

Departmental systems

Whereas management systems are multidisciplinary and usually require decisions from a management team, departmental systems are more frequently unidisciplinary.

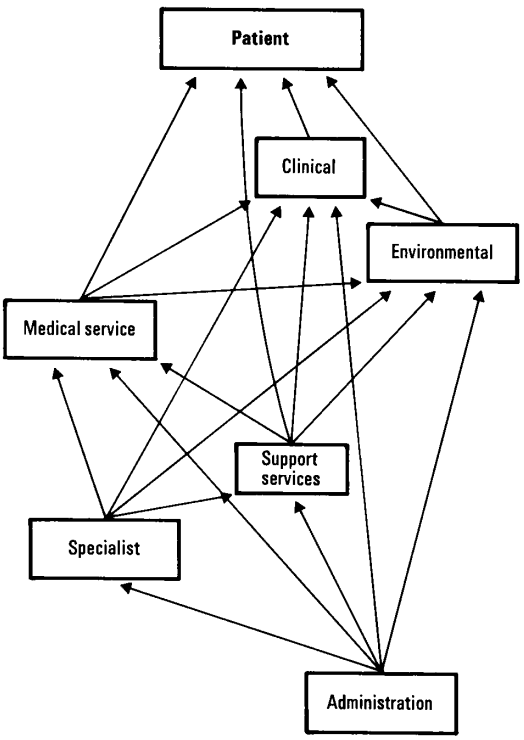
Consultation with other departments and professions is essential when the departmental system is being prepared, but the task of drawing it up can appropriately be allocated to the head of department. In the same way that management systems can be grouped, departmental systems too can be arranged in a methodical way.
At Northwick Park Hospital, departments were divided into the six groups illustrated in Figure 10, each of which was defined as follows.

Clinical departments
All clinical specialties: consultant medical staff directly responsible for the treatment of patients, and their junior medical staff. It is assumed that each clinical specialty, whether it forms a large or small part of the service, is a department.

Environmental departments
These are the main departments in which the care and treatment of patients are carried out: wards, clinics, theatres. They are essentially multidisciplinary departments.

Medical service departments
These are professional and technical departments which are directly concerned with the treatment, investigation and diagnosis of patients. These activities are distinguished from those of the clinical departments in that they are carried out at the request, or by the authority, of the clinician who remains responsible for the clinical treatment of the patient. This group includes the nursing service. To complete the definition, it will be seen that medical service departments serve the patients directly, and also indirectly by providing a service to the clinical and environmental departments.

Figure 10 Functional relationships of hospital departments



Support service departments
These serve the patients indirectly by providing a service to each group of departments defined above. They also serve the patients directly, but at the request or instruction, or under the supervision of, the clinical, environmental or medical service departments. The grouping includes the hotel services, medical records and secretarial services.

Specialist departments
These, with some minor exceptions, do not serve the patients directly. They maintain, in the widest sense, the four groups defined above. They include the finance, supplies, works and personnel departments. In different ways, they are concerned with providing and maintaining the resources of all the departments directly serving the patients.

Administrative department
The role of administration is coordination. Again, with few exceptions, it does not serve the patients directly. It has a responsibility to the health authority to coordinate and to carry out the authority's policies in the management systems.

Appendix I (page 106) lists the departments which come within these groups.

Using the working groups

Once the accountability for drawing up each system is defined, it will be found that the administrator or manager concerned will usually require the help of one of the working groups mentioned in the previous chapter.
A typical working group for drawing up an operational system for the sterile supply service, for example, would comprise the manager of the department, a microbiologist, the supplies administrator, a nursing representative, a consultant surgeon and an administrator. Groups need to be kept small. This helps to ensure that decisions are made, that different ideas are exchanged, and reduces the possibility of important matters being overlooked.

Documentation

Documentation will record the group's conclusions, many of which will require endorsement by the commissioning team. Matters of policy will have been determined by one of the principal officers of the district or by the district management team.

It is desirable to determine a uniformity in the format, if not the style, of each systems manual. This prevents unnecessary padding being introduced, such as lists of rooms or job descriptions. The following headings are the main ones to be included.

1 Brief summary of the original (or revised) operational policy.

2 Main functions of the department, to include

a services to be provided, including any specialised work

b normal hours of work

c on-call and emergency arrangements

d predicted workload and target standards (where it is possible to define these)

e specialised items of equipment, where these have a large impact on the main functions of the department; for example, in a radiology or physiotherapy department.

It is sometimes useful also to itemise those services which will NOT be available, which may have to be negotiated with neighbouring hospitals, or which will be provided by a centralised service from further afield.

3 Organisational structure, including lines of accountability within the hospital as a whole as well as within the department.

4 Costed staffing structure

a proposed grading and numbers of staff (managerial, supervisory and operational)

b proposed deployment of staff over each shift

c outposted staff requirements.

For large departments, it may be preferable to show the staffing structure as an appendix to the manual.

5 Budgetary arrangements: an outline of the main components of the department's budget.

6 Relationships with other departments Where there are uncertainties, this is the opportunity to clarify responsibilities and record the agreement that has been reached.

7 Departmental record systems for collecting information about patients, staff or finance.

8 Departmental procedures This section will summarise the main decisions about the way the department will be run, using the checklist in Appendix H (page 97) as the basis of the main subjects to be covered. Many of these will affect the specification of equipment, the design of documents and the eventual staffing structure. Most procedures, particularly those relating to safety, will determine the content of inservice training.

9 Management systems: cross reference to any management systems that may have particular significance for this department.

Good documentation has additional value in very large projects where there is a wide time span between start and finish, during which many people will come and go. Continuity, essential but difficult, is helped if all aspects of the project are well documented.

By definition, operational systems are never complete or static. Nevertheless, manuals should be published as soon as the policy and method for a system are coherent enough to write down. Additions to manuals, and perhaps some drastic alterations, will be inevitable, but the labour of making these amendments is usually small compared with the time spent in the initial discussions and in preparing the first documents. An example of a completed manual is shown in Appendix J (page 107).

Using the manuals

The number of operational systems cannot be set precisely before a hospital opens, but it is probable that there will be one manual for every type of management system (for example, communications, budgeting, public relations, personnel policy) and one for every departmental system. In a large district hospital there could be a hundred manuals, and to complete them all might take between a year and 18 months.

It will be these manuals which form the basis of training staff to operate the hospital as it has been planned. In some cases, procedure manuals will evolve: for example, ward procedure manuals to explain to nursing staff how to obtain services from supporting service departments.

Departmental procedure manuals will include working instructions for operating certain items of equipment, and health and safety procedures.

All this is crucial to success. Neglect or half-hearted effort will certainly lead to failure in commissioning. It is, therefore, up to the commissioning team to devise a logical sequence for producing the manuals, and to make sure the various working parties keep to programme. Eventually, the commitment to the decisions embodied in the operational systems, and the effort that has been put into their preparation, will have a major bearing on the efficiency of the hospital, and on the satisfaction of its staff and its first patients.

Further reading: see reference 8.

5 Completion of activity data sheets

Activity Data Bank

Although completion of data sheets in a large project is an early activity, the information they contain continues to form the basis of a great deal of the commissioning task. In smaller projects they usually represent the beginning of the project. For these two separate reasons, an explanation of the system is included in this chapter, before the chapter on supplies. Data sheets form the starting point for scheduling, selecting and, ultimately, ordering the equipment.

The Department of Health and Social Security has developed a bank of information known as the 'Activity Data Bank' (ADB) to provide clearer and more detailed briefing for design teams. Updating is continuous and coded references to ADB sheets are included in all building notes produced after September 1979.

The data bank was originally conceived as a means of ensuring that the design and equipping of a given room or space proceeded from a knowledge of the activities that would take place there, and an understanding of the ergonomic consequences of those activities. This was considered more appropriate than the past practice of giving the designer a set of predetermined room enclosures and areas known as 'room data'.

The bank is a comprehensive library of two kinds of document, which are different but complementary. These are called 'A sheets' and 'B sheets'.

An A sheet describes the activity that has to be catered for in design and equipping of each room or space. It includes a list of the equipment likely to be located there; each item is allotted a code number corresponding to the B sheet for that item. The A sheet also indicates details about environmental conditions such as heat, light and sound, as well as finishes required for that space.

B sheets carry a more detailed description of the individual activities listed on the corresponding A sheet. The B sheet also carries dimensional drawings of the equipment required in the space described on the A sheet and, in textual form, classifies these into groups (see below and next chapter, page 39). It also indicates any services which the equipment requires.

Completing the activity data sheets

A users' guide to the ADB is available from the DHSS, together with a complete library of sheets covering almost every hospital department. Figures 11 and 12 reproduce examples of A and B sheets. The guide also helps those involved in planning to specify their practical requirements more accurately. The system ensures that the characteristics of doors, floors, walls and ceilings are stipulated and that the capabilities of patients likely to use each area are reflected in the ultimate layout of each room.

The ADB contains the best available detailed guidance for spaces in typical hospital departments, but certain details may vary with local practice or requirement. It is the job of the project team to select and, if necessary, revise the data for specific building projects, after having decided the operational policies for the whole hospital. Thus, the complete brief exists in detail before design work starts. The DHSS 'nucleus' planning and design group follows this procedure in assembling the A and B sheets included in the data packs for each 'nucleus' department.

In most major projects, the sheets will have been completed before the commissioning team is established, and entirely different local representatives may have been involved. It is a vital but time-consuming task which requires great patience because those who complete the sheets will determine just how successful each room turns out to be, both for the patients and the staff. Local officers responsible for this task, therefore, should have practical experience of each department's requirements or, if not, should recognise the importance of fully involving others who do. For smaller schemes, commissioning teams will almost certainly take on the task themselves, working alongside the architect and design engineer.

This bank of information gives today's and future planning and commissioning teams a head start over their predecessors. Nevertheless, each room still has to be discussed in the light of the project's own individuality: all the questions about the precise use of each room still have to be answered, and a plan for each room has to be completed.

Classification of equipment

Equipment is classified in four groups, the first three of which are included on B sheets. This distinguishes items of permanent equipment which are supplied by the contractor from those which have to be scheduled and purchased by the health authority.

Group 1 Items, including engineering terminal outlets, supplied and fixed within the terms of the building contract.

Group 2 Items which have implications on space, building construction or engineering services, and which are fixed within the terms of the building contract but supplied under separate arrangements (usually having a permanent fixed location and purchased by the health

ISSUE RELATED TO NEW HBN'S **A**

ADB	ACTIVITY SPACE DATA SHEET	B0207
ORIGIN DHSS	DATE FEB 1980	
ACTIVITY SPACE NAME	ADULT ACUTE/GERIATRIC MULTI BED, 3 BED ROOM, O_2 AND SUCTION WARDROBE	PROJECT CODE

ACTIVITY UNIT SELECTION	2	BED/COT CARE bedside wardrobe 2 socket outlet	A26BF
	1	BED/COT CARE bedside wardrobe, oxygen and suction, 2 socket outlets	A26BH
	1	CLEANSING clinical handwashing	A02AH
	2*	CHAIR semi easy high back	C04CH
	1	MIRROR wall mounted 1500x400mm	C17CA

FUNCTIONAL DESIGN REQUIREMENTS

FACILITIES needed for the following activities

i) Medical and nursing care for patients who may arrive at their bedsides in wheelchairs, on stretcher trolleys, or in a bed.
ii) Patients to undress and dress in vicinity of bed.
iii) Patients in bed, or sitting in bed area, to receive therapeutic and clinical attention from health team staff.
iv) Patients to sit in bed area for therapeutic, social, and recreational purposes.
v) Patients to read, write, listen to wireless, view TV and use external telephone.
vi) Patients to receive visitors.
vii) Patients to have privacy as required and requested.
viii) Storing patients' clothing small suitcase and personal effects in bedside wardrobe and locker.
ix) Clinical handwashing.

NB* FINAL SELECTION OF CHAIR TYPES TO BE MADE AT PROJECT LEVEL.

PERSONNEL

3 patients, 6 others

ADDITIONAL EQUIPMENT OR ENGINEERING TERMINALS not associated with a specific activity unit

1 No Telephone jack point
1 No TV aerial outlet
1 No TV sound socket
1 No socket outlet, 13A switched, single
Curtain track - window, glazed partition, and bed cubicles.
Green master indicator for nurse call system
Clock, synchronous

PLANNING RELATIONSHIP

Close to Staff Base and supporting ancillary rooms essential

A

TECHNICAL DESIGN DATA B0207

		SPACE REQUIREMENTS		SPACE LOCATION PERIPHERAL	SPACE LOCATION INTERNAL	NOTES
AIR CONDITIONING		Air temperature	Winter	18°C		
		Air changes	Natural or mechanical	NAT		W
		Air changes	Rate if mechanical			
	★ SPECIAL CRITERIA	Air temperature	Summer			
		Air humidity	Summer			
		Air humidity	Winter			
		Air filtration				
		Air pressure	(relative to adjoining space)			
LIGHTING		Lighting intensity	General	100 lux		at Floor / Circulation area
		Lighting intensity	Night	3 to 5 lux		at Floor / at Bedhead
		Lighting intensity	Local	0.1 to 1 lux		at Bedhead
		Lighting intensity	Emergency	150 lux		H
				Grade B		
	★	Glare index				
		Colour rendering		COLOUR CORRECTED		
SAFETY		Maximum accessible hot surface temperature		82°C	50°C	D
		Maximum domestic hot water supply temperature		60°C	43°C	
NOISE		Acceptable level of noise from outside				
	★	Total acceptable sound level within space		45dB(A)		V
		Description of noise which cannot be tolerated within space		DISRUPTIVE		
		% of time acceptable sound levels can be exceeded		10%		

NOTE ★ Absolute control of these conditions cannot be attained except by the use of costly and complex engineering systems. Values should only be put against these conditions where they are essential to room function as defined in and in accordance with Departmental Guidance.

DESIGN CHARACTER

INTERNAL FINISHES	WALLS	FLOOR	CEILING
GRADE	5	3 or 6	5
SURFACE REFLECTIVITY			

DOORS	Bed/patient trolley access, through vision, retention 90°
IRONMONGERY	
WINDOWS	Clear, solar control, privacy control
INTERNAL GLAZING AND METHOD OF OBSCURING	Clear for observation
HATCH	N/A

Figure 11 Activity space data sheet (A)

authority but fixed by the contractor).

Group 3 As group 2 but supplied and fixed, or placed in position, under arrangements separate from the building contract (usually fixed and placed by the health authority after handover).

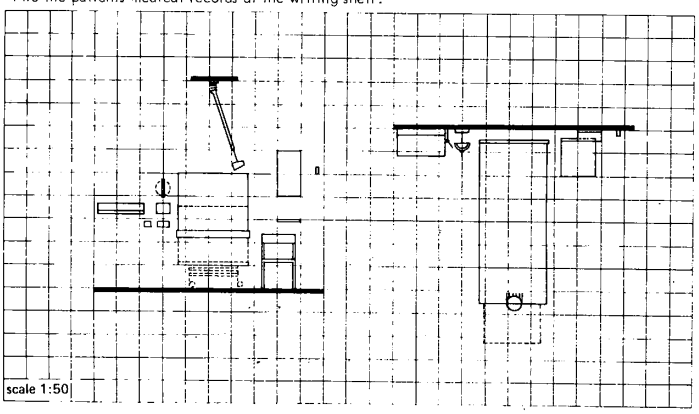
Group 4 These items, not having space implications on planning, are not included on B sheets but are to be found in departmental equipment lists. They are items supplied under arrangements separate from the building contract (normally purchased by the health authority) which may have storage implications but otherwise have no effect on space or engineering requirements.

Figure 12 Activity unit data sheet (B)

ISSUE RELATED TO NEW HBN's **B**

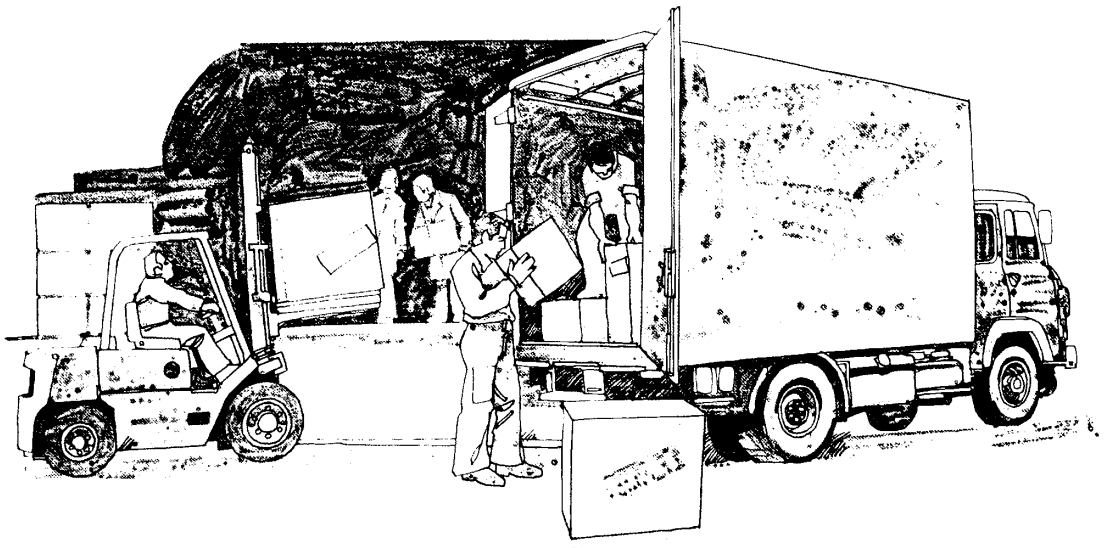
ADB	ACTIVITY UNIT DATA SHEET	A22BH
ORIGIN DHSS		**DATE** MARCH 1980
ACTIVITY UNIT TITLE	EXAMINATION Clinical examination area with variable height bed	**PROJECT CODE**

Activities: Facilities for a patient to prepare for and undergo a clinical examination and/or minor treatments in a consulting/examination room in an out patient department. 1) The patient with assistance as necessary, undresses, dresses to the right hand side of the bed. 2) The clinical examination by a doctor mainly from the left hand side of the bed assisted by a nurse. 3) Minor clinical procedures may be performed requiring the use of a dressing trolley. Additional lighting being obtained from the ceiling mounted examination light. 4) Notes can be entered into the patients medical records at the writing shelf.



Group	Item	Qty	Size mm	Ref. No.
1	Socket outlet, 13A switched double	1		
	Lamp, examination, adjustable, ceiling mounted	1		
	Switch, 5A	1		
	Flap, writing, wall mounted	1	600x400	
	Shelf and support	1	300x150	
	Mirror, wall mounted	1	600x300	
	Hook, double, wall mounted	1		
	Track, cubicle curtain	A/R		
2	Sphygmomanometer, wall mounted	1		F0329
3	Chair, stacking	1		THL110
	Bed, Kings Fund	1		TLK400
	Mattress, Kings Fund bed	1		VQM620

6 Equipment and supplies



Phases of equipping

For a major project there are four main phases of equipping, each one closely associated with financial control.

The first is Stage I in the Capricode planning system when there has to be an overall assessment of equipment costs, usually 17½ per cent of the total capital cost for a district general hospital, with an additional 5 per cent for a teaching hospital.

The second phase is associated with the completion of the activity data sheets (see Chapter 5). Equipment is classified into the four groups, and departmental costs within the prescribed total are determined.
If, exceptionally, some Group 1 items are excluded from the building contract, usually to gain an economic advantage, this expenditure must be excluded from the equipment cost limits.

Specification becomes the third phase, during which selection teams are expected to keep within the department allowances shown in the equipment cost allowance guide (known as 'ECAG') issued by the Department of Health and Social Security every six months. Care should be taken not to overlook non-departmental items: these are items which are shared between a number of activity spaces whose cost eventually has to be contained within the overall equipment allocation. At the end of this phase, final estimates must be determined and approved, taking into account the value of items that can be transferred from hospitals due to close.

The final phase incorporates obtaining quotations, and ordering and receiving goods. Financial control continues to be important. This requires a commitment accounting system, a six-monthly updating of the capital budget and, if required by the health authority, a cash limit control within individual financial years.

Equipment scheduling

The completion of activity data sheets at an early stage will have gone a long way towards producing final equipment schedules. The major deficiencies are the exclusion of Group 4 items for activity spaces and the omission of all departmental items. Health equipment notes published by the DHSS provide useful supplementary information but, as the following list of notes (available as this book went to press) shows, not all departments are included and some notes will be under revision.

1 Equipping a hospital building

4 Ward units

6 Diagnostic x-ray department

8 Physiotherapy department

9 Occupational therapy department

10 Kitchens

11 Dining rooms

12 Outpatients' departments

14 Training school for nurses

15 Pathology department

16 Boiler house and steam boiler plant

18 Administrative department

19 Department of medical photography and medical illustration

20 Mortuary and postmortem room

21 Maternity department

22 Accident and emergency department

23 Children's ward

24 Residential accommodation for staff

25 Laundry

28 Dental department of the outpatients' department

29 Pharmaceutical department

34 Works department for district general hospitals and teaching hospitals

37 Hospital accommodation for the elderly

Permanent equipment

For large schemes, computers should be used instead of the more laborious manual methods. A package developed by the NHS Computing Standardisation Steering Committee is available from regional computing centres, each of which receives updated tapes, discs and programmes issued by the Welsh Health Technical Services Organisation.[37] It is designed to operate in conjunction with ICL 1900 and 2900 range of equipment and copes equally well with large schemes and with small developments such as equipping a new ward or extending a department. A users' group has been established with responsibility for maintaining its effectiveness and ensuring that it responds to changing needs.

Its programmes cover about 30 different departments, 1900 types of room and over 6000 separate items of equipment, and provides the following interrelated documents.

A coded catalogue of equipment items in alphabetical and numerical sequence with suggested item prices

A coded catalogue of types of rooms and spaces with relevant cost guides

A coded catalogue of departmental items with relevant cost guides

A list of suggested equipment for each room showing item prices and room cost guides (see Figure 13)

A consolidated list of identical items indicating their location and cost

The programmes provide the facility to list all items which require a service agreement or to be included in the hospital's planned maintenance scheme. Similarly, those items which require training manuals can be listed separately. All items available on central contracts can be identified.

A similar system is available for the nucleus system of hospital development. This uses the same data base and provides a whole hospital equipping schedule by rooms and activity spaces within departments. All the details are costed. The information is available either on microfiche or paper print outs. All items held on the equipment scheduling system are reviewed every six months to keep the cost guides up to date. The computer cannot, of course, accord with the room-numbering system drawn up by each architect. But the computer's numbers can be amended to the architect's numbering. This makes it possible to use the equipment scheduling system print out for the ultimate fitting out and commissioning of each room.

The system does not go as far as linking the scheduling task with computerised ordering systems. Print outs have to be negotiated with regional computing centres. It cannot prewarn about long delivery periods, nor does it cover highly specialised items such as theatre instruments or data-processing equipment. Nonetheless, it breaks the back of the scheduling task, and is described by a tape-slide training kit available to any commissioning team through regional supplies or computing officers, or on application direct to the Training Aids Unit, Hydestyle Hospital, Godalming, Surrey.

Consumable equipment

Comprehensive lists of consumable requirements should be drawn up well in advance. Some of these items will be determined during the planning and design stages as policy decisions are made. The decision to use certain disposable goods might be associated with the selection of capital equipment; for example, materials required for technical equipment. All of these should be listed as relevant decisions are made.

There is also the large task of designing documents: forms, brochures and other printed material, including disclaimer notices and warning signs.

Delivery periods for some of these supplies are no shorter than for capital equipment, and forecasts of demand for some items will be needed for inclusion in the quantities tendered for under regional and interdistrict contracts. Ordering and specification have to be equally well planned to fit into the overall programme.

Despite this preparation, it is not unusual for a few isolated requirements only to be identified once the building is handed over. For example, the need for some supplementary direction signs may not become apparent until those originally provided under Group 1 are in position.

ROOM TYPE 32340 UTILITY CLEAN MLDNS MATY S COST LIMIT £1200.00

GROUP	ITEM CODE	DESCRIPTION	QUANTITY	EST.UNIT COST	EST.TOTAL COST
3	FC037	TROLLEY,CLEAN LINEN,DISTRIBUTION	2	116.64	233.28
3	FC039	TROLLEY,DRESSING/INSTRUMENT,SS,750X450,BS4068	1	112.66	112.66
4	FC107	BOWL,VOMIT	2	6.15	12.30
4	FC267	MUG,TOOTH	20	0.24	4.80
3	FC315	SCALES,BABY	2	267.85	535.70
3	FC408	TROLLEY,DRESSING/INSTRUMENT,SS,450X450,BS4068	1	95.33	95.33
2	TCH600	DISPENSER,SOAP	1	8.83	8.83
2	TCK410	HOLDER,SACK,WALLMOUNTED, SMALL	1	11.01	11.01
3	TDV410	TROLLEY,GEN PURPOSE,965X915X455 MM,2 TIER,BUFFERED	1	92.06	92.06
3	TEL500	HOLDER,SACK,LARGE,FREESTANDING	2	32.68	65.36
3	TEQ320	LADDER,STEP,2M,PLATFORM TYPE	1	20.00	20.00
4	UXB260	BOWL,WASH	6	0.82	4.92

COST LIMIT £1200.00
BASIC ITEMS EST.COST £1196.25

ROOM TYPE 32350 UTILITY DIRTY MLDNS MATY S COST LIMIT £700.00

GROUP	ITEM CODE	DESCRIPTION	QUANTITY	EST.UNIT COST	EST.TOTAL COST
4	FC215	JARS,SPECIMEN,VARIOUS,SET	6	9.91	59.46
2	FC416	RACK,SIX BEDPAN HOLDERS	1	31.21	31.21
4	FC430	HOLDER,BEDPAN	6	5.17	31.02
4	KCC06	TEST TUBE,DOZEN	1	0.54	0.54
4	KCC35	RACK,TEST TUBES	1	0.98	0.98
4	MLS750	STAPLER,PAPER SACK	1	15.31	15.31
2	TCH600	DISPENSER,SOAP	1	8.83	8.83
2	TCK410	HOLDER,SACK,WALLMOUNTED, SMALL	1	11.01	11.01
3	TDV410	TROLLEY,GEN PURPOSE,965X915X455 MM,2 TIER,BUFFERED	2	92.06	184.12
3	TDV563	TROLLEY,SOILED/FOULED LINEN	2	30.45	60.90
3	TEL500	HOLDER,SACK,LARGE,FREESTANDING	6	32.68	196.08
2	TQE500	HOLDER,PLANT POT,INDIVIDUAL	15	0.65	9.75
4	TQV410	VASE,FLOWER	60	1.34	80.40
4	UFK210	FUNNEL,PLASTICS	2	0.82	1.64

COST LIMIT £700.00
BASIC ITEMS EST.COST £691.25

Figure 13 Example of a computerised equipment list and cost guide

The entire task of equipping has to be tackled in such a way that no single item is overlooked, regardless of whether it is contained in the capital schedules or not.

Specification and selection

The specification and selection of equipment deserve much more time than is often allocated. This is the time to avoid the mistakes of other commissioning teams and to take note of the results of many evaluation studies on hospital equipment (see below). It is also the time when money can be saved, with supplies staff working alongside the different multiprofessional selection teams who represent the users.

It may be possible to transfer some equipment from hospitals likely to close as a result of the new development. The compatibility of transferred items has to be considered, but this must not be used as an excuse for rejecting equipment that is still serviceable.

The commissioning team should coordinate these efforts, and everyone should have access to a well organised library of catalogues and reference literature, either already available in the supplies department or set up specially in the project room. The selection teams need to be small and must be given authority to reach conclusions amongst themselves within the approved financial allocation. It is at this stage that the understandable enthusiasm of individuals has to be controlled by drawing attention to financial realities. Choice, of course, must also match design.

The DHSS has for many years emphasised in its guidance the importance of buying to British Standards. The department also produces specifications developed by its own working parties for a wide range of equipment which, in many instances, result in such equipment being available to National Health Service authorities under central contract arrangements. Information about all such contracts is given in the DHSS's health service supply purchasing guides. Evaluation reports on numerous products are given in the DHSS's booklets on health equipment information. The scientific and technical branch of the DHSS Supply Division also gives advice to NHS authorities on all scientific and other sophisticated equipment: enquiries should be addressed to the director at 14 Russell Square, London WC1B 5EP. It is essential, therefore, not to disregard the availability of this help which will often save valuable time.

For clinical and other specialist equipment, the requirements of the professional users will be the most important consideration, subject to financial constraints and to any relevant national or regional policies. In the very early stage, departmental heads and medical consultants are not always available to advise on their requirements. As a result, selection teams are tempted to hold out until their expertise or, in some cases, personal preferences are forthcoming. The supplies officer in charge of this work must, therefore, distinguish between choices which cannot wait from those which can or must, and must persevere in keeping to the programme. Too much reliance has often been placed on local opinion when equally valid and identical advice is readily available elsewhere.

Use of interior designers

Selecting equipment, creating a colour scheme, matching furnishing with paintwork and varying the light fittings to take account of the use of the room, require care, effort, skill and, above all, patience. The involvement of the architect varies considerably. Some architects feel that the artistic solution to the design of a new building should involve them in the specification of complete room layouts: others leave the task of equipping entirely to the client.

In some schemes, it is felt that the users themselves should play a leading part in selecting equipment. In others, it is a matter of policy that an interior designer be employed to specify colour schemes, help plan room layouts and choose equipment, together with the users and purchasing officers. The services of an interior designer are very desirable if furnishing schemes are to be successful, aesthetically and functionally. There should be a total design plan: everything the eye sees in each room and space should coordinate with it.

Most regional health authorities employ their own design teams who can provide the balance of creativity and function. This aspect of interior designing is often misunderstood. The employment of a designer is sometimes regarded as a luxury, liable only to lead to extravagant ideas. In fact, one of his skills is to produce the most attractive and functional scheme within the budget. The proposals of an interior designer can be as inexpensive as those of the most cost-conscious client.

A leading interior designer has put forward firm views.

> 'With so much emphasis on flexibility in the use of new buildings, it is increasingly important for designers to plan a strategy where changes to the use of rooms do not lead to a hotchpotch of unrelated colour and design. It is therefore wise to retain the characteristic colour and pattern for each room in the walls, floors and curtains, which do not move, with movable furniture chosen in colours which will fit in with any scheme within one department. If different colours are used from one department to another, these variations can act as a colour code to prevent furniture straying. Hardpressed staff are no respecters of decor.'[34]

The interior designer usually achieves such aims first by presenting ideas at small exhibitions for departmental staff or at meetings of the selection teams. Illustrations of colour and pattern schemes, or a range of equipment loaned from manufacturers, give users the opportunity to express preferences.

Understanding the clients' needs is particularly important regarding lighting and colour. Green and yellow can be unsuitable in areas used by patients.

Choice of soft furnishings will have an impact on laundering and cleaning, fire safety and domestic services. Mock-ups of entire rooms are sometimes worth producing. For example, a room for a staff residence offers ample scope for users to discuss and subsequently to decide the best solution. Experience of many new hospitals has proved that the collaboration of a professional designer in the selection of non-clinical equipment and furnishings is preferable to the less expert and uncoordinated choices likely to be made by hospital staff themselves.

To summarise, the services of an interior designer should be employed

at the earliest beginnings: to become identified with the original objectives of the scheme and to be aware of any unusual or overriding design features

when activity data sheets are being completed: to determine overall colour strategy, to help determine environmental conditions of each room (including lighting, a feature often disregarded and as often overprovided) and to advise on the use of non-flammable and non-toxic gas-producing materials

at the equipment specification stage: to recommend colour schemes, to help specify non-clinical equipment (such as finishes to chairs) and to advocate and advise on works of art, plants and so on, which otherwise may be regarded as extras to be provided only if additional funds become available after handover.

Ordering procedures

The supplies officer has to plan his purchasing operation to ensure that all equipment will have been delivered, inspected, tested, and installed within the time allotted in the commissioning network or control plan. He should be a party to setting target dates related to his function in the plan. And in his contribution to drawing up the programme, he should make due allowance for unpredictable market conditions affecting delivery dates. He will concentrate most attention on those items of equipment which **must** be there for the opening. Most equipment will be of that kind, but there will be some items that will not be essential to the opening of services. Essential equipment needs to be considered for early delivery, with a generous reserve of time to allow for exceptional delay. Guarantees of delivery by a certain date have become so difficult to obtain that complete confidence in any programme becomes impossible, however well organised the programme may be. The uncertainty makes it more important to plan the equipping task and not to leave it until too late.

Those responsible for purchasing need to work backwards from the predicted handover date, to be ready to start placing orders from 18 to 12 months in advance and to produce a management plan to monitor progress. Allowance should be made for those items known to have long delivery periods. Orders for most items should have been finally placed not later than nine months before they are required. This allows adequate time for suppliers to deliver and for the supplies officer to chase less reliable firms well in advance of the date on which delivery is due. Particular care is needed to obtain Group 2 items (see page 36) in good time to suit the main contractor. Any serious delay in receiving these can put back the entire building programme.

As a rough guide for those responsible for the equipment programme, four important objectives must be set.

1 In a major hospital project, listing and specification ought to be completed 15 months before handover.

2 The workload of preparing and typing out orders must be assessed. A rough guide of 30 to 45 minutes per order can be used to calculate the size of the task.

3 Purchasing staff should be given enough time to embark on an intensive period of chasing all suppliers six months before handover.

4 Adequate storage requirements must be assessed and provided.

Specialist supplies staff will find the Yorkshire RHA's guide to the planning, financial control and management of capital equipment schemes a useful guide.[5] It includes sample order forms and associated supplies documents. Where possible, orders should indicate the room numbers relating to each item of equipment. This will facilitate the later task of labelling goods when they arrive.

Planning the delivery programme: storage arrangements and installation

Storage space in advance of handover will be required. Any spare space in other local hospitals can be put to good use, or local warehouses may have to be hired. Storage must be arranged if there is to be any hope of bringing services into use within a reasonable period after handover. Warehousing adds to costs and this has to be judged against other factors in the programme, but it can become particularly attractive where more than one scheme can be associated.

An alternative convenient solution is early handover of a suitable section of the building. Unless equipment can be delivered beforehand, muddle and uncertainty are inevitable right up to the time the hospital becomes operational.

All these methods require double handling of equipment, but this is a small price to pay for the reassurance of knowing that the equipment has arrived and that the overall commissioning programme is being kept to. It also allows equipment to be carefully checked on arrival to ensure it meets the specification of the order and is not damaged. A good system will also ensure that discounts for prompt payment are not lost.

It is a good plan to set aside a number of separate rooms so that specialist equipment, such as surgical instruments, can be kept together ready for checking by the appropriate officer. For equipment which is subject to

warranty, arrangements should be made with the suppliers to stipulate that the warranty period begins only when the item is brought into use, not from the day of delivery.

Areas used for temporary storage of furniture and equipment must be adequately heated and locked. Additional security staff are necessary if there is a risk of theft and vandalism. Cleanliness, good lighting and space for sorting are desirable. Fire hazards must be eliminated. Access to the storage area, if this is in the building and taken over in advance, must be planned. Use of corridors and lifts, for example, must be agreed with the contractor.

Such an arrangement which makes possible the reception of furniture and equipment before handover of the main building will reduce the time required to make the building operational. It also evens out the work of the receiving section of the supplies organisation. And all items can be labelled with their room numbers while in store. The fitting-out stage after handover then becomes more of a porterage exercise and, given an adequate number of temporary staff, can be completed in weeks rather than months.

If it becomes realistic to be able to rely on a large proportion of suppliers' delivery dates, it is sometimes a good plan to arrange deliveries in a series of fortnightly periods. Large consignments can often monopolise portering staff for a few days.

Installation of equipment requires forethought even though some of the sophisticated items will have been included in the main contract and should be working at the time of handover. Sufficient time must be allowed for the calibration of x-ray equipment, and for checking the use of equipment under operational conditions, such as automated laboratory equipment. Data-processing systems may also be complicated to commission. A useful precaution is to list all such items, with the predicted time required to install them satisfactorily, and to base delivery dates on this information.

Planning the delivery programme in this orderly and systematic way, staggering the workload where possible and relating the sequence to the overall commissioning programme, will reflect credit on the work of the supplies department.

Further reading: see references 28, 36.

7 Personnel management

Preparing for the personnel task

When an entirely new organisation is being devised and large numbers of staff are to be recruited or redeployed, the resources of the personnel department are likely to be stretched to the limit. Almost certainly additional personnel staff will be required during the peak period of recruitment, and at an early stage a senior personnel specialist should be nominated to join the commissioning team. The personnel task from start to finish requires meticulous financial control, and at the outset a policy must be established about standards.

New hospitals tend to acquire rather than necessarily require more staff than their equivalent predecessors. A better strategy would be to estimate, at the early planning stage, running costs of staffing the new hospital based on the present staffing standards in the district. Then, nearer the time when the new hospital is due to open, a choice can be made to use any 'growth money' for raising staffing standards or for some other purpose. The task throughout will be shared by the personnel department and the departmental managers. The personnel specialist will have the expertise to prepare the manpower plan and to draw up the recruitment programme for the whole organisation. The departmental managers have the task of deploying and training staff within the operational systems which they themselves have helped to devise. Together, the personnel officers and departmental managers have responsibilities to maintain good industrial relations during a period when the processes of staff consultation and communication in all their aspects have to be at their very best.

Producing a manpower plan

A good example of a manpower plan for a new 300-bed hospital due to open in 1986, is the report on staffing Telford District General Hospital.[38] It required the full-time services of a research officer for about six months to produce it, together with considerable help from a local personnel officer. But such is the importance of anticipating staffing requirements, and of recruiting new employees to open services on time, that a detailed document of this kind will pay dividends. The Telford plan contains the following information.

1 Recommendations for the health authority to consider well in advance of opening, such as providing funds for advance recruitment, training programmes, policy on redeployment and joint consultation.

2 A detailed staffing structure, department by department, including financial estimates for each category of staff contained within a predetermined cost limit.

3 Personnel action plan, with managerial accountability defined for the various officers involved, spanning the entire commissioning period of six years.

4 An analysis of current commuting patterns from outlying towns.

5 An estimate of the way staff might transfer from units that will close (Figure 14 shows how this was presented).

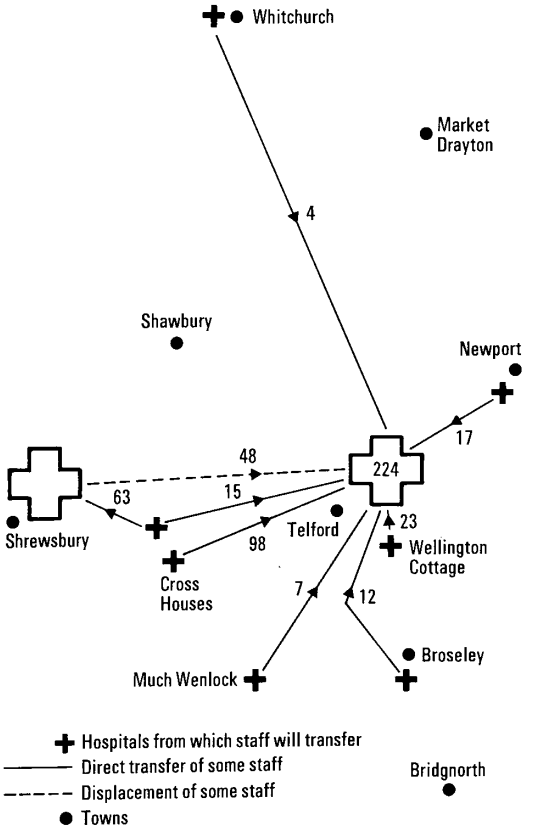
6 Estimates of staff stability and turnover.

7 Requirements for residential accommodation.

The first parts of this excellent manpower plan are reproduced in Appendix K (page 115).

Studies of the manpower experience of new hospitals have shown that the location, design and size of a new hospital have immediate and longer-term staffing implications. Mistakes at the planning stage can lead to excessive expense in the use of staff, or to under-utilisation of valuable capital resources. The following points should also be noted.

Figure 14 Pattern of staff transfers from closing units to a new hospital



1 Selection of the site, where there is a choice, has not always weighed up the staffing consequences against the merits of other factors. It may be validly argued in some cases that two smaller developments on separate sites could, in the long term, have advantages over centralisation on one site.

2 Population predictions, in terms of size, age and social class, can be significant in areas where changes are occurring comparatively rapidly. These may have longer-term rather than immediate consequences, but their impact must be assessed.

3 Staff nowadays do not have any great preference to work in a new rather than an older hospital. It used to be thought that new hospitals would attract staff, simply because they provide better working conditions.

4 The local authority planning department can often give an early warning about a possible influx of potential employees, for example, in the event of new housing estates being built or, conversely, of a major site clearance scheme likely to require people to move away. Similarly, any major proposal to alter public transport systems will have an impact on a new hospital's ability to recruit.

5 Most staff will be recruited from the local labour market. It is important to know the characteristics of the market and to consider using sophisticated surveys to anticipate difficulties and to plan solutions.

6 Outside influences can alter the characteristics of a local labour market in a comparatively short time. Trends in the development of local trade and industry, and an understanding of their competitiveness in rates of pay and other incentives, should be considered.

7 The importance of providing residential accommodation and the stage at which it is provided in phased schemes must not be overlooked. It may not always be a good idea to give first priority to *all* junior doctors and nursing staff regardless of grade and hours of duty. The personnel department should decide a policy based on the needs of the locality, taking into account such factors as shift-work, on-site availability of staff on-call, probable duration of employment, whether staff can find their own accommodation, and the hospital's ability to recruit through national advertising.

Special considerations relating to nursing staff

The size and complexity of the nursing service requires special attention. Inevitably, a new hospital brings about a review of the entire way nursing services are organised. It offers opportunity to examine the nursing management structure, the division of responsibilities on wards and in departments such as operating theatres between nursing and non-nursing staff, the organisation of rotas, the proportion of qualified to unqualified staff and of full-time to part-time staff.

The ramifications for nurse education are invariably complicated and require separate study. The phasing in of learner-nurse allocations to a new hospital sometimes poses problems. Where a school of nursing already exists, the availability of students in their first, second and third years of training needs to be anticipated in conjunction with the nurse recruitment programme as a whole. The option of increasing learner intakes well in advance of opening a new hospital, and the financial consequences of doing so, need to be examined as one way of easing the subsequent recruitment task. The Telford plan shows how much work needs to be put into planning for the nursing service, including the special attention which must be given to identifying how far the new hospital can be staffed by transferring nurses from elsewhere.

Use of norms and other factors in determining staffing levels

Commissioning teams are likely to have the preparation of a master recruitment plan as one of their principal tasks. The starting point is to produce a schedule of all staff required, usually expressed in whole-time equivalents (WTE). To accomplish this, commissioning officers often start seeking out published guidance on staffing norms for each department. But information of this kind can mislead rather than help, given the wide variation of local circumstances, including financial constraints, the design and predicted workload for each department. The Department of Health and Social Security sensibly steers clear of publishing anything too specific, but a report of its manpower intelligence unit was issued to administrators in a letter in April 1978.[12] Commissioning teams would do well to take note of the report's distinction between recommended minimum standards and 'good practice' norms, some of which have been derived from management services studies. The report includes advice about making allowances for leave, sickness and nurse education, and in the appendix refers to norms published in various reports spanning about 20 years. But it warns officers to be cautious in interpreting staffing recommendations from professional associations whose concern, quite properly, is to raise standards as a national objective rather than to help determine exactly how many staff are needed in one particular new hospital. Similar words of warning are given in an article on the use of staffing norms by Harrison and Rathwell, 1979.[16] The best advice for commissioning teams is to carry out this assessment with great care, department by department, using predicted figures of workload as a basis for setting standards. Information from management service studies and generally accepted average staffing levels should not be entirely disregarded, but local officers should rely on their own first-hand experience to achieve the right balance between the various competing interests. Specialist advice, not necessarily available locally, should also be drawn upon, particularly if entirely new departments are being opened, or modern technology in use elsewhere can provide the team with useful guidance.

The entire task is a balancing act and reasonable rather than ideal standards will determine the outcome. Once the total staff complement has been calculated and approved, further thought has to be given to the estimated proportion of full-time to part-time employees.

Unless this is done the number of individual members of staff might be considerably larger than the predictions, giving rise, for example, to a shortage of changing and residential accommodation. It is also important to anticipate reductions in the standard working week which, within a few years, can lead to a substantial increase in the total staff complement.

Organisational structures

The personnel department should be helping to draw up organisational structures. The significance of this task is often overlooked. Not only is it necessary for establishing the grading structure of each department at managerial, supervisory and operational level, it often points up the need to start early negotiations on the grading of certain posts, or on behalf of individual employees who are likely to transfer and whose salary or conditions of service might be affected by the change. Once each department has a definitive organisational structure, a start can be made on the task of drawing up job descriptions and job specifications.

Personnel services and operational systems affecting staff

The personnel specialist on the commissioning team will be expected to make sure everything possible is being done to attract staff to work in the new hospital. This will include the provision of the following services, and any relevant operational systems relating to them.

Staff health service

Changing accommodation

On-site shops and services such as banks and hairdressing

Parking policies for cars belonging to staff

Staff social club organisation and facilities

Day nursery requirements

Staff identification system

Local transport services

Staff accommodation, including policies for the management and the use of residences

Staff information bulletins

In some cases, this will involve managerial responsibility in, for example, running the residences. In other cases, it may be launching a social club, a day nursery, or a staff health service. There will also be operational systems to draw up, such as that required for industrial relations, and for the way the personnel department itself is run. Training policies will require considerable planning. And a staff handbook, if it is to be provided, usually requires several months of preparation.

Staff recruitment

The intricacy of commissioning as a whole can be illustrated in no better way than by considering the complexity of the recruitment programme. Some of the more general questions are as follows.

1 When is each senior member of staff required to be in post? Sometimes this should be assessed to the nearest month.

2 What are the possibilities for local employment? To what extent will recruitment draw on local staff? What efforts will be needed to recruit from further afield?

3 Do some of the gradings of managerial posts require special negotiations before advertising? If so, allowance of four to six months may be needed. Which of these appointments should be made during the early stages of commissioning?

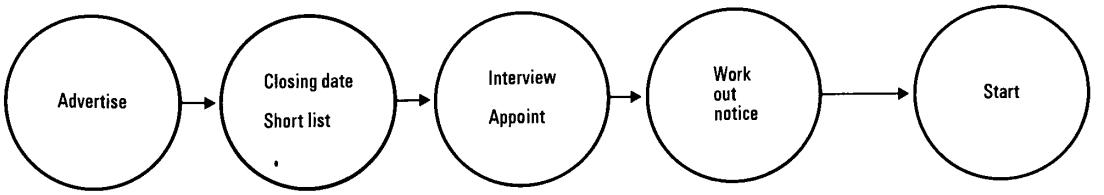
4 What is the optimum date for each category of staff to be in post? It is essential to avoid appointing a large number of staff too soon. Apart from wasting money, this can cause serious problems of boredom to the extent that the hospital loses new staff before it opens.

5 What about the difficulty of finding certain kinds of staff? It may be necessary to advertise more than once before a satisfactory appointment can be made.

6 Should some groups of staff be appointed by a certain date so that appropriate training can be given?

Recruitment requires a realistic advertising budget and an all-out effort using a variety of methods: leaflets and brochures drawn up and circulated at the appropriate time, imaginative advertising, talks, visits and exhibitions. However, although a personnel department working in conjunction with departmental managers will require expertise to obtain large numbers of new staff,

Figure 15 Recruiting and appointing staff: sequence of events



success may be as dependent on the hospital's location, public transport and residential accommodation, as it is on pay or an enlightened recruitment policy. To control the entire recruitment task, a comprehensive programme needs to be drawn up, either manually or by computer, showing the sequence of events for each post (see Figure 15).

Staff morale: transfers and closures

The personnel officer has another specialist contribution. Everything possible must be done to maintain morale throughout a very difficult period of organisational change. I R L Gibson points out in his article, *Commissioning Hospital Projects – Management or Mismanagement?*[7], that opening a new hospital is not success in itself, and that 'plus marks' can be added if nervous breakdowns have been avoided! Managers who are themselves excited and enthusiastic about the project may find it difficult to appreciate the worry and resistance that many of their staff feel. Clear statements of policy on staff transfers and redundancy will help to relieve the anxiety.

Usually most staff working elsewhere can be satisfactorily absorbed into the new organisation. Any worry about this will be eased if each member due to transfer is consulted and informed about what the job will be in the new building, where it will be and who the boss will be. There may be some hostility towards the new hospital. It will be seen as a disturbance to the routine life of many employees with nothing much to offer in return for people required to transfer. The way staff are grouped in a much larger hospital may have some bearing on this feeling. It may, for example, be possible and desirable to retain certain groupings of staff so that working friendships are not broken. Many staff who have spent several years in a smaller organisation may take the view that small is beautiful. Their worry of being smaller fishes in a larger pool may never be entirely dispersed. Orientation training can help to overcome these worries, partly by building up confidence about being able to make an equally useful contribution in the new hospital and by fostering teamwork between those transferring and those newly recruited. As the time approaches for the transfer, anxiety inevitably rises. Management must respond. Information bulletins, staff journals, good communication within and between departments, all have a part to play. While everything possible may have been done to prevent delays or disappointments, some unexpected difficulties will arise. Staff need to be informed about these so that the causes are understood and consequent adjustments to the programme are accepted rather than criticised. An example of an excellent staff journal used in Leicester is reproduced in Appendix L, page 118.

Induction, orientation and training

The magnitude of the training task will range from

practical instruction on how to operate new equipment to the more tenuous but equally important requirement of training people at all levels how to respond favourably to organisational change and work towards common objectives. Inevitably, most districts will be selective in deciding what resources to put into training, but even a modest commitment will require a special allocation, for which due allowance should have been made by the commissioning team in its original estimates. To coordinate this essential part of any commissioning project, the personnel department makes a major contribution in ensuring that induction and training programmes are ready at the appropriate time.

The programmes fall into eight categories.

1 Induction for all new staff whatever the grade. Many hospitals have found that benefits accrue from a regular morning session one day a week to which all starters for that week are invited. This also helps all categories of staff to mix at a time when getting to know one another is as important as knowing one's own job.

2 Senior management conferences (essential throughout the commissioning programme).

3 Training for supervisory staff.

4 Job training, including trial runs and explanations of operational systems.

5 Orientation courses for staff transferring from other hospitals.

6 Professional, technical and craft training in collaboration with colleges of further education.

7 Special training opportunities for individual departmental managers who require new skills or greater knowledge of new systems.

8 Refresher courses, such as 'back-to-nursing'.

Further reading: see reference 32.

8 Public relations

In the early stages

The planning, construction and opening of a major hospital is an important series of events in the life of a community. Sometimes, information required by the public is simply news of progress; but there can also be controversial questions which can only be properly answered by means of a carefully organised public relations programme. People often fear that friendliness, individual attention and kindness will be less in the new hospital than in the old. These fears need to be allayed.

Wherever a new hospital is built, it will be of public interest, but there is a special challenge in a rural area, where people may not be accustomed to centralisation, and where smaller hospitals, affectionately regarded, may have served a scattered population for many years. A big new hospital may be less attractive to the public or staff, who are happy with the standards and atmosphere of the existing hospitals, than it is to its planners. Those who have to manage the process of change must face up to this social reaction positively, not defensively, in order to give an understanding about policy as well as support for the changes that are planned. Health care is as important as education to a community and people must have confidence that the new hospital will meet their needs.

The objectives of a public relations programme will be the same for developments in larger towns and cities. For example, Verity Kemp in her article, *Paving the Way for Change*[20], describes a campaign conducted in the East End of London. This set itself three principal objectives: to explain the nature of the present provision for health care and the reasons for changing it; to disseminate information on the progress of building the new hospital; to introduce the subject of hospital closures and prepare the way for the rationalisation of hospital services.

The important point is made that the commissioning team saw the campaign as one of high priority. It also adopted a positive policy that the staff should always be in possession of any news about the new hospital before the general public, so public relations activities had to be tailored to fit closely with the programme of staff consultation. Apart from sound managerial reasons for doing it this way, there was the potential benefit that each of the 3500 staff members could become public relations agents in their own community. Considerable help came

The picture opposite shows a public relations display on a busy Saturday morning in Nottingham Market Square.

from the community health council whose own contacts and knowledge of local organisations widened the impact of the campaign.

Public relations methods will depend on the effectiveness of news media in the locality, particularly local radio, as well as the resources allocated to the task. Some commissioning teams develop a whole range of imaginative activities. In Nottingham, for example, there were street theatre productions, a poster competition for schools, continual use of local radio by providing the radio station with news stories, and a colour supplement in the local newspaper. Exhibitions of plans and models will not only inform the public but also generate interest in recruitment and offers for voluntary help. It is better to offer talks to local organisations than to wait for invitations. It is useful to have a panel of speakers, including some departmental heads, who can draw up a good, informative programme, and who can share what otherwise can become extremely demanding for one or two principal officers. An approach that has proved generally successful is the 'road show', with well produced visual aids to help speakers and for display in cinemas, at summer fêtes, and so on. The entire effort requires imagination and coverage which gets to the heart of the community's interest and concern for its local health service.

Between handover and opening

A public relations week, with some sessions booked for local organisations and others open to the general public, is yet another large task to fit into the commissioning programme. It has to be planned several months in advance, using local press to invite organisations to book their visit. The best time to arrange the programme is probably about two weeks before patients are to be admitted. By then, most of the equipment should be in position and there will be several senior members of staff who can be briefed to help act as couriers. The open sessions can present something of a risk because numbers are unpredictable. Local knowledge is usually sufficient to guess what the response will be, but if it is decided not to leave things to chance, a system of asking people to write in for tickets can control the number of visitors to suit the availability of couriers.

Where such a programme has been undertaken, perhaps for as many as 5000 people, hospitals have found it well worth the effort. It lets local people see their hospital, and so helps remove some of the apprehension of any subsequent visit as a patient. It lets people know that voluntary help is welcomed, either in the form of personal service or of organisations raising money to pay for amenities. It helps people understand some of the

commissioning problems of phasing. It gives information about employment opportunities. It concentrates within a short time all the visits of local organisations which otherwise might be spaced out throughout the year and disrupt the day-to-day work of the hospital.

It is important also to keep up the use of the local press and radio to publicise the final commissioning activity. The object should be to bring public interest to a head at a time which coincides with the start of the advertising campaign for staff (about four months before the date of handover of the building) and to sustain it until the time when the first patients are admitted. It is a good plan to invite the local press to have a visit of their own sometime after handover. A national press day may be appropriate for some projects.

Liaison with other local services

The effects of a new hospital on other services are often under-estimated. Family practitioners, public transport services, voluntary organisations, neighbouring health authorities, Department of Employment offices, ambulance services, social services and other local authority departments, are affected. Sometimes the contact with these services has to be formal because important decisions affecting them have to be made, sometimes it is a matter of exchanging information to help officers in those services coordinate any changes necessary to keep in step with the overall programme. General practitioners seem always to welcome a regular news bulletin.

The hospital's own voluntary services also need to be considered. Decisions on what is required should form part of the development of operational systems. Thereafter, proposals to use voluntary service have to match a programme of recruiting volunteers. Most new hospitals also have to consider whether to set up a new league of friends who can provide material benefits and also forge links between the hospital and the local community.

Financial implications

It must not be overlooked that a public relations programme and the administrative work involved will require funds. And it must be remembered that a well organised programme is likely to be money well spent.

9 Closures and transfer of services

Policy

Although the work of a commissioning team often entails coordination in transferring resources from a service that is due to close to a new hospital, policy about the transfer is a matter for the district health authority, and leadership during its implementation must come from the district management team.

The King's Fund project paper, *Closures and Change of Use of Health Facilities*, draws attention to the importance of examining different options before starting the final process.[21] It contains the following useful seven-point plan.

Clarify the need for change – the reasons for it, alternatives, consequences and benefits, particularly with regard to clinical care.

Develop a realistic timescale.

Pursue the concept energetically and purposefully.

Consult all concerned frankly and maintain contact after consultation.

Think and plan ahead – develop all stages of the operation well in advance.

Remember that the exercise requires extra managerial effort, particularly from senior management, as well as wholehearted support from management generally.

Understand the attitudes of the public and staff.

Consultation procedure

The DHSS circular HSC (IS) 207[10] provides guidance generally applicable in the National Health Service about how to prepare and circulate a consultative document relating to permanent closures. It includes a recommendation that the following subjects should be covered.

Reasons for the proposed closure or change of use.

Evaluation of the possibilities of using the redundant facilities for other purposes, or disposal of the site.

Proposals for alternative employment of staff.

Relationship between the closure or change of use and other developments within the plan.

Implications for patients, for example, travelling and transport.

Nigel Weaver's article, *National and Political Aspects of Closures – Can We Manage Things Better?*[35], draws attention to the increase in number and pace of hospital closures since the mid-1970s, with an average of 50 whole hospitals closing each year. He refers to political involvement and vacillation which can either delay or prevent closure. In such cases, service planning for the new investment can be disturbed so severely that the entire commissioning programme has to be recast, and the commissioning team, while assuming one eventuality, has to be prepared to cope with another.

Transfer of patients' services

Transfer of patients' services from a hospital due to close to a new one will require a well prepared programme based on a series of consultative meetings over a long period. At the early stage of planning the transfer, various policies and rough dates have to be decided. Continuity of care of patients must be uppermost in the minds of those coordinating this task. It will include decisions to run down admissions. In some projects, a particular time in the year may be preferable. Assistance from neighbouring hospitals, which also requires careful planning, can help to lessen serious disruption of services.

Once the policies about medical care have been decided, the effect of the programme on individual members of staff has to be considered. The consultant staff's timetables for operating, ward rounds and outpatients' clinics usually have to be fitted into an entirely new clinical programme. If the entire process is gradual, the transfer of staff has to be dealt with on an individual rather than a collective basis. This task requires meticulous attention to detail and a published timetable of events to match any reduction of workload with a similar programme of transferring staff at the right opportunity to suit both the new hospital and the old.

Transfer of staff

The NHS now has considerable experience of projects where large numbers of staff have transferred from old hospitals to new ones. For example, in South Nottingham Health District in 1979 about 700 staff from four hospitals transferred to the new University Hospital, with only two employees becoming redundant. For those facing a similar task, reference to Appendix M, page 120, may be useful. This document produced by Nottinghamshire Area Health Authority illustrates very well the importance of negotiating and publishing personnel policies for staff affected by closure. It reflects a sensitivity to staff anxiety and the health authority's approach in doing everything possible to safeguard the interests of its staff as individuals. Figure 16, also based on personnel policies adopted in Nottingham, sets out the procedure for filling the posts in a new hospital, with first preference given to staff available for transfer, then to other staff employed in the district, before general advertising.

Long before this stage is reached, there must be open meetings, visits to the new site, discussions of policy with

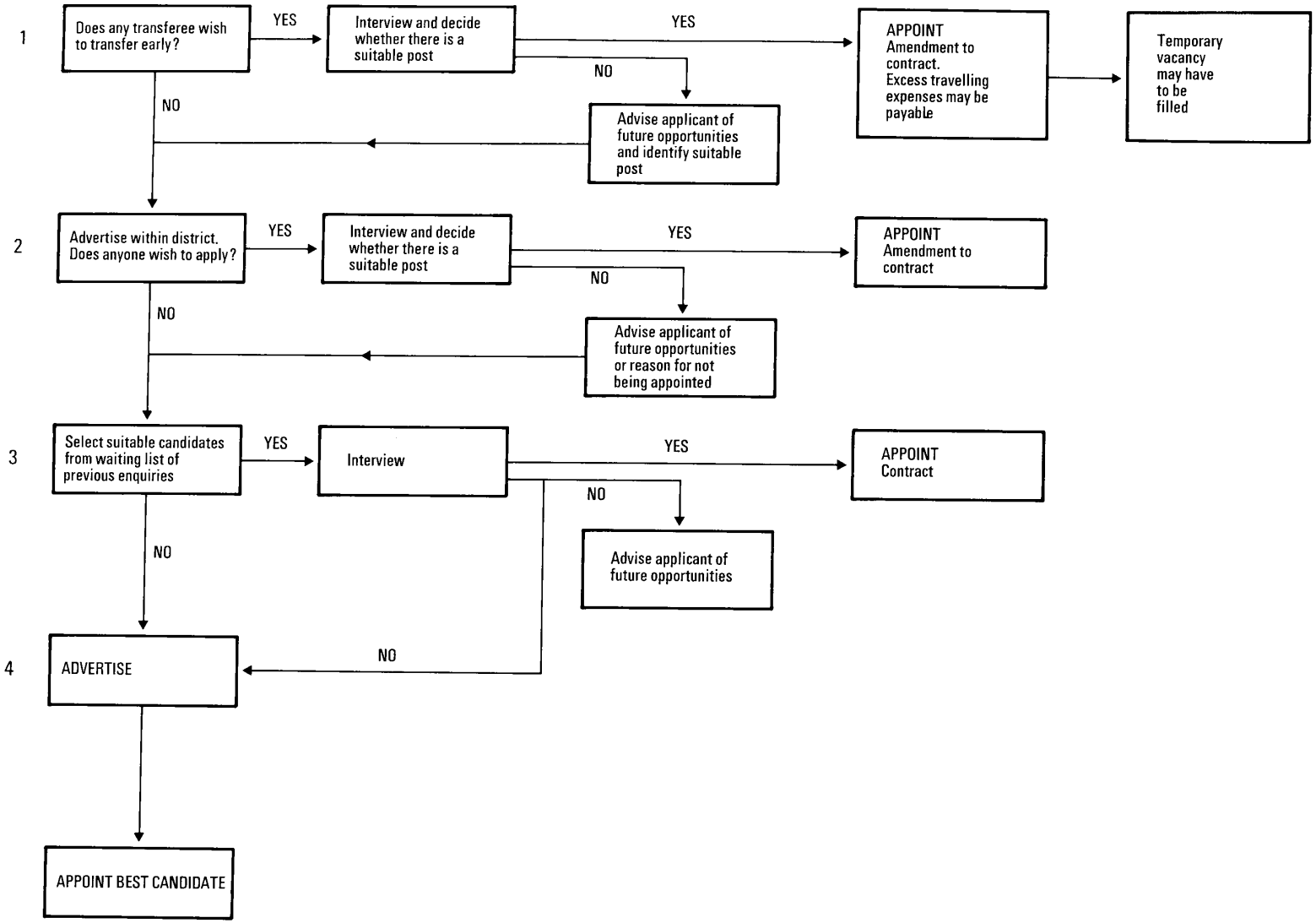


Figure 16 Procedure and sequence for filling posts in a new hospital

trade unions, departmental meetings and, eventually, interviews with each employee. This is a heavy commitment for the personnel department to arrange, in conjunction with all the heads of departments concerned. It might take nine to twelve months and there are no satisfactory short cuts. So many issues have to be overcome: redundancy policy, agreements on protection, assistance with transport, retirement policy and effects on bonus schemes. The machinery to deal with grievances or appeals must also be in good working order. Training or retraining will also form part of the personnel task (see also Chapter 12, page 65).

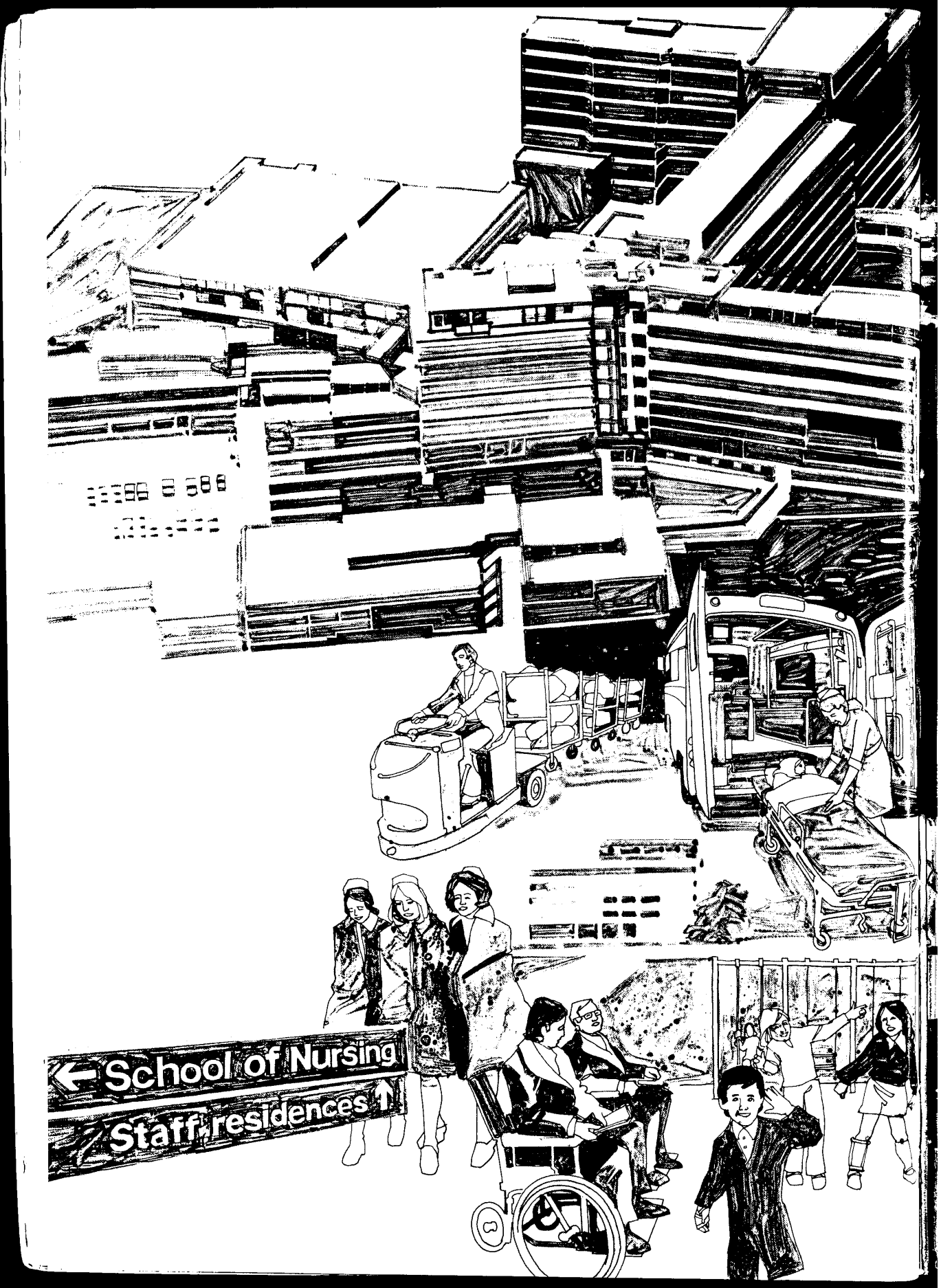
Throughout any major transfer, those coordinating and directing the programme will need sensitivity to the anxieties of staff, good processes of consultation, and a willingness to give time and attention to individual employees. The principal aims must be to maintain morale and create good relationships among all staff in the new hospital.

Other consequences of closures

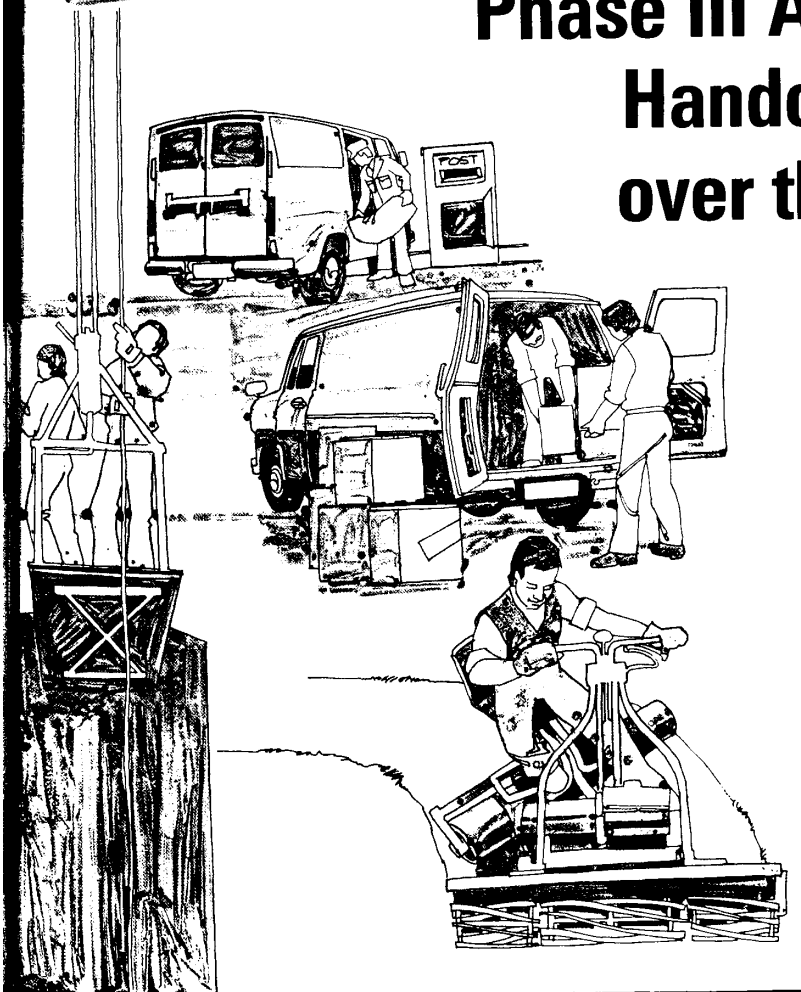
The chapter on 'decommissioning' in the King's Fund project paper (see page 53) has a substantial checklist of other matters that have to be dealt with. It includes

- Equipment: items to be listed room by room and schedules produced to divide items into those transferrable to the new hospital or elsewhere, and those to be disposed of by sale or for scrap.
- Phasing out service agreements and other contract services, such as window cleaning.
- Security arrangements to prevent vandalism.
- Provision of appropriate maintenance service and, perhaps, heating, depending on the future use of the building to be closed.
- Decisions on what to do with medical, financial and staff records, and other documents.
- Retention of certain items of equipment or documents for archival interest.
- Keeping fire alarm systems operational.

The project paper also includes a typical timetable for disposing of a building in which legal advice, assessment by the district valuer and disposal by agents took about two years to complete.


School of Nursing
Staff residences

Phase III Approaching Handover, Taking over the Building, Opening Services



10 Use of the site

Site visits: contractual implications

Staff members often do not know, unless they are intimately involved with a new project, about the strict procedures for access to the site. The contractor has possession of the site and, thereby, sole and untrammelled right of access to it. Any reduction in this freedom, unless specified in the contract, is a breach of the contract and the contractor may act accordingly. This means that no member of the staff may go on to the site without the contractor's permission. Apart from security and the need for the contractor to get on the with job, the safety of the visitor has to be considered. Building sites are dangerous places and accidents can easily happen to the unsuspecting visitor.

Up to the date of handover there must be a strict protocol about site visits. Any arrangements must be made by the architect (the site architect, if there is one) who is the official link between client and contractor. The best procedure is to create one single channel of communication between the architect's office and the commissioning team, the project administrator or commissioning officer being the most appropriate link. Similarly, and equally important, after completion the contractor should observe the same protocol if he requires access to hospital property.

Some staff ought to familiarise themselves with the building before handover and probably more should be done to encourage this, not only for commissioning and training purposes, but also to overcome opposition or anxiety about working in the new building. But pre-handover visits should be kept to the minimum and, when permitted, their timing and purpose should be carefully specified. A definition of these requirements should be included in the contract documents, but the more onerous they become the greater will be the tender price. In no circumstances should there be any encouragement to identify features of the design which the users, dissatisfied in some way, will attempt to have changed within the contract period. Inevitably, the users see some things which disappoint or even alarm them. It is up to the commissioning officer to channel these views into the right forum for discussion.

Practical problems of joint use of site

When building starts on a large project, the contractor often has the site to himself. In phased schemes or when

new buildings replace old ones on the same site, the site has to be shared. There has to be a clear understanding between the hospital administration and the contractor about arrangements for sharing it. Use of roads (jointly or separately), security, fire precautions, tidiness of the site, specific signposting for the contractor, location of site offices, car parking, earth moving, storage of materials, right of access to each other's buildings, are all matters which have to be decided contractually before going out to tender. Proper regard must be given to the needs and responsibilities of both the hospital and the contractor, but both parties usually have to face inconvenience. The architect can do much to promote mutual understanding. One way is for a representative of the hospital to attend the architect's progress meetings with the contractor, but it must be understood that the hospital's representative is there by invitation, not by right. A better way is to establish contact through the site supervisory staff for minor matters, and to deal with the architect for the more important.

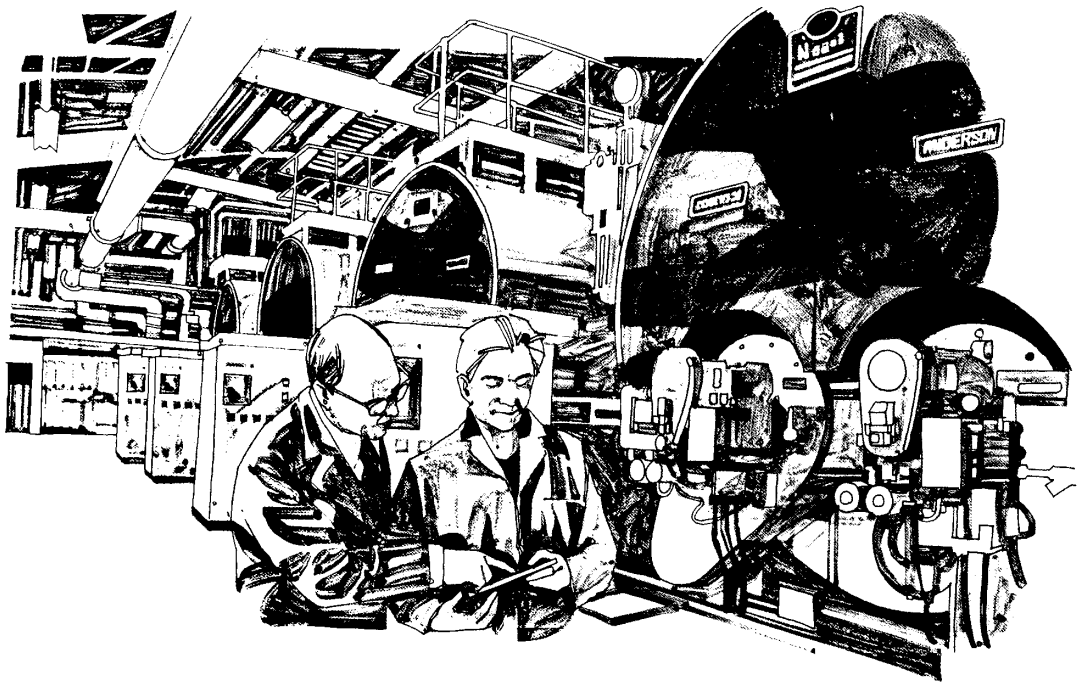
Practical problems will arise which often require diplomacy. For example, noise from contractor's work can disturb resident staff trying to sleep, patients trying to rest, surgeons operating or consultants seeing patients in outpatients' clinics. Engineering services may be disrupted when connecting or disconnecting requires a temporary shutdown of water, power or steam. The contractor cannot merely be asked to stop work. If a good relationship has been established between the site agent and the hospital authority, due warning will be given or the contractor might be able to rearrange his work to suit the hospital. But any request to vary the contractor's programme will usually cost money and may present serious contractual difficulties and delay.

Fire prevention and security must be given very careful consideration. They pose particular problems because no one person is responsible for the entire site.

The very fact that the site is shared means that a large number of people without any check of identification have free access to it, and this creates serious difficulties of control. The remedies are by no means foolproof, but preventive measures by both kinds of user, and extra efforts to train staff, are essential if damage and losses are to be kept to a minimum.

Coexistence is part of the commissioning officer's coordinating role. It requires his tact – and often his time – usually at short notice.

11 Pre-handover to handover



Final snagging

As the date for completion approaches, the clerk of works, directed by the architect, should prepare 'snag lists' of items not completed according to specification. This speeds and assists the contractor's management and reduces the number of items remaining on the snag lists on the date of completion so that the building is ready for final handover.

The supervising officer, who is usually an architect, should insist that the contractor makes a determined effort to reduce snag lists as much as possible before the functional handover. Contractors are generally more ready to act quickly to remedy defects before the building has been taken over than afterwards, when the tendency is to try to leave all outstanding matters to be dealt with together at the end of the defects liability period (see page 64). Frequently, considerable inconvenience is caused to commissioning activity if the contractor's men are remedying a long list of snags after handover.

Extension of time

Occasionally an extension of the contract period is granted to the contractor. This is a contractual matter on which the architect has sole discretion to act. In no circumstances can the client intervene.

Not all extensions of time justify a contractor's claim for financial reimbursement. Assessment of claims lies solely with the architect. The client should, of course, ensure that his acts or omissions do not contribute to a claim to extend time and to consequent financial reimbursement.

Commissioning engineering services

This is the advancement of an engineering installation from the stage of static completion to full working order in accordance with specified requirements. Success depends largely on two main factors: first, the quality of the original brief, specification and design; second, clarification of managerial accountability of each person concerned with the various activities of the total task.

Engineering commissioning is a comprehensive set of activities, undertaken from planning to evaluation, and includes design, manufacture of components, construction, setting to work, acceptance testing, final

adjustments, and the process of converting the installations to a dynamic condition.

Many of the engineering problems in new hospitals have, on the face of it, been due to poor contract specification, which results in the contractor not having enough time for commissioning. Consequently, completion dates have approached before engineering services have been properly checked. This gives rise to uncertainty about handover: pressure to take over the building competes with the engineer's advice to postpone until final testing is satisfactory.

Even if enough time has been allowed, there might still be pre-handover difficulties if attempts are made to reduce the period for commissioning work in order to recover time lost by delay in other parts of the contract. Pressure to take short cuts of this kind should be resisted to prevent the postponement of serious problems until handover. If that happens, there will usually be contractual difficulties and delays in getting the remedial work finished.

The entire engineering commissioning programme, therefore, must be planned and implemented with the same thoroughness as the rest of the commissioning task. It must fit into the contractor's programme of work in such a way that it will not interfere with the logical sequence of work for various finishing trades. Certain tests of a special nature, for example seasonal tests, need planning. The methods and extent of the commissioning procedures required by the client must be defined and included within the specifications so that the contractor is fully aware of his obligation when the tender is being prepared.

Some engineering tests will have to be done after handover; for example, tests which depend on seasonal conditions, or which cannot be completed until staff are working in a department and coping with normal operational conditions. To carry out such checks after handover, engineers require access to parts of the hospital already in use and the cooperation of the staff. The reasons for testing should be explained to staff and the programme of work organised well in advance so that necessary adjustments to the normal work of the period can be properly planned.

The complexity of the overall task and contractual relationships are such that it is essential to clarify the accountability of all the engineering personnel involved, both to avoid contractual difficulties and to facilitate a successful commissioning process.

Design engineer

The role of the design engineer includes the preparation of the detailed designs, the engineering drawings, the specification and documentation of the contract and, subsequently, ensuring that the installation is carried out by the contractor in accordance with the terms of the contract.

In conjunction with the commissioning engineer appointed by the contractor, the design engineer prepares commissioning manuals for the services he has designed, and ensures that the site supervisory staff complete the manuals as inspections of the work are undertaken during construction. He has to ensure that the results of tests recorded in the commissioning manuals meet the specified requirements before the certificate of completion is issued.

He also has to see that the plant can be monitored while it is running, so that test readings can be taken and recorded without dismantling the plant. Only in this way can commissioning be properly carried out. At the same time, plant layout and access to equipment, such as valves, are inherent parts of the design functions which if not carried out properly, can create difficulties during the commissioning process.

An important function is to specify the content of testing explicitly so that the contractor can make allowance for it within the contract.

Commissioning engineering adviser

The DHSS publication, Health Technical Memorandum No 17, *Health Building Engineering Installations: Commissioning and Associated Activities*[11], advocates the appointment of a commissioning adviser to the client. He should provide advice on the following matters.

1 User aspects of design.

2 Technical facilities for maintenance and operation.

3 Commissioning, including its programming.

4 Final acceptability of installations.

5 Records, service manuals and staff instructions.

6 Feedback of operational and maintenance experience.

The commissioning adviser may also be helpful in settling any differences of opinion in ways which will give greatest satisfaction to the users. Such a post is essential for major projects. As the date of handover approaches, it is useful for the adviser to attend some of the commissioning team's meetings so that the hospital's commissioning activities keep in step with progress on the site.

The role of the site engineer (or engineering clerk of works)

In addition to his monitoring duties in respect of the contract, the site engineer is required to undertake the following functions.

1 Make inspections and witness the final acceptance tests.

2 Programme the attendance of others, such as the local engineer, insurance representatives and departmental users, at the final acceptance tests.

3 Advise hospital staff by explaining engineering systems,

helping to set up maintenance schemes and providing local training.

The local engineer

The works officer of the health authority has to ensure that the operation and maintenance of the building can be properly carried out immediately after handover. This requires a long period of preparation by gaining, during the construction period, detailed knowledge of the plant and services, and setting up programmes of planned maintenance. For these purposes, the hospital's own local engineer should be appointed well in advance so that he can associate his work with the design team and the site supervisory staff. He then becomes committed to the total commissioning programme. He can ensure that he receives all the documentation he needs about the plant and the acceptance tests applied to it, and gradually he becomes thoroughly familiar with all the detail of pipework, ductwork and cable systems before they are cased in. Health authorities have not always been easily convinced of the arguments for early appointment of the hospital engineer and in many commissioning programmes this has been left to the last moment. There is no doubt, however, of the strong case for early appointment.

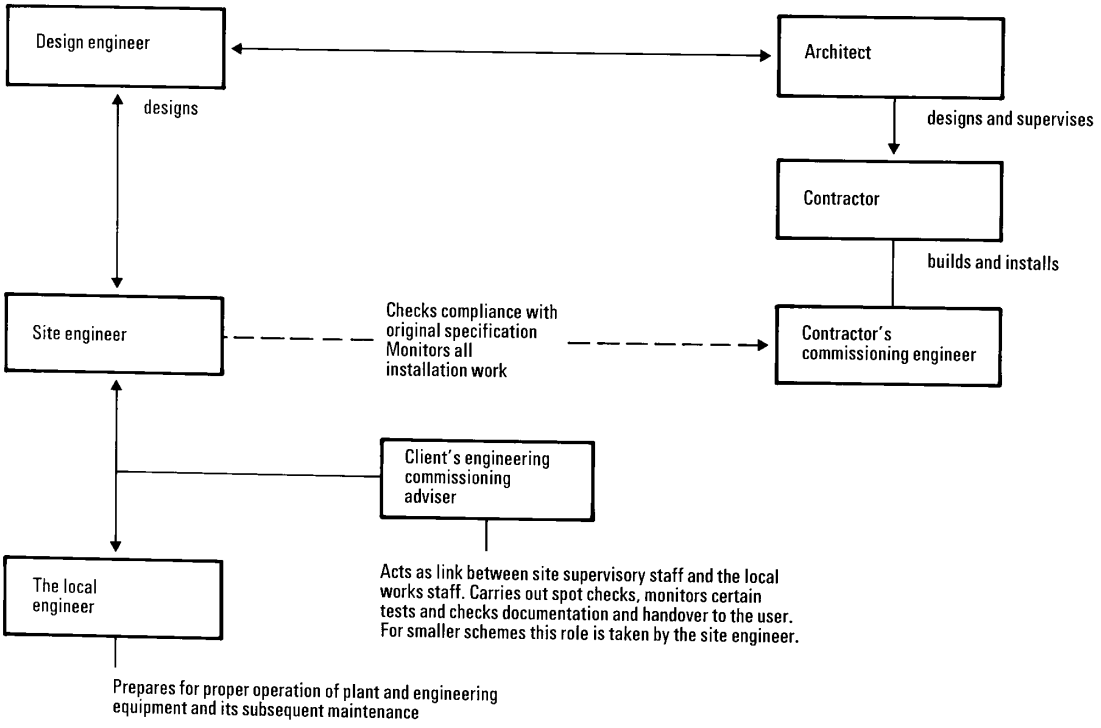
After handover, he has the important job of making sure that departmental managers fully understand the proper use of equipment. It is becoming more sophisticated and complicated to operate. The job, which is made easier if explanatory leaflets are prepared, should be incorporated in the initial period of trial runs and staff training. Otherwise, equipment can easily be mishandled and put out of service prematurely.

During engineering commissioning, the local engineer should join the site engineer in

- witnessing inspection and tests
- planning maintenance and operation
- training staff
- visiting the site at reasonable intervals during construction.

It is important to emphasise that the local engineer only assumes responsibility for running and maintaining services from the date of handover. Until that time, he must not interfere with the control of the contract. Figure 17 summarises in a very simplified form the relationship of all the engineering staff mentioned above

Figure 17 The engineering team



who will be involved in this complex and vital part of the commissioning task.

Procedures for taking over

Most capital projects in the NHS are carried out in accordance with the *JCT Form of Building Contract (Local Authority Edition (With Quantities))*.* This states clearly that the only person authorised to carry out the final inspection of the work is the architect nominated in the contract. He may be a private architect working for a health authority, or an architect employed by the regional health authority. He certifies practical completion and the building transfers to the health authority.

Efficient takeover of a contract is essential to ensure that the works have been completed entirely in accordance with the contract drawings and specification. The acceptance of the building by the architect, as exemplified in signing the CERTIFICATE OF PRACTICAL COMPLETION, has legal and financial implications. From the date of signing the certificate begins the DEFECTS LIABILITY PERIOD, and after the completion of the SCHEDULE LIABILITY PERIOD DEFECTS, the architect will issue a FINAL CERTIFICATE. This certificate enables the client to take possession of the building and site. The date stated on the certificate marks the date when the building is taken over by the user.

Phased or sectional completion

If the client wishes to take possession of any part or section of the building before total completion, this must be incorporated by design and description in the bills of quantities before receipt of tenders, and must be entered in the appendix to the contract conditions. On behalf of the client, the architect should take over that portion of the work, issuing a certificate stating his estimate of its approximate value, and that the practical completion shall be considered to have taken place. The defects liability period starts from the day on which the client takes possession. Sectional completion of parts of the building that are practically complete can also be accomplished within the terms of the contract by agreement with the contractor. This is explained in more detail under the heading, *Defects liability period.*

The contractor will be relieved of his responsibilities for the insurance of the part he has handed over.

Handover meeting with the client

At the handover meeting, the architect is the sole arbiter of whether the contract building can be accepted.

Normally, the tender documents will describe the

arrangements for the client's maintenance and operations staff to familiarise themselves with the building and plant, so facilitating a smooth transition of responsibility to the client.

The handing-over process should include a detailed tour of the buildings and site, the handing over of the keys, operational manuals and record drawings, and agreement on the procedure for reporting and attending to defects. Availability of drawings is not always given its due priority at handover. The client should be provided with scale plans, elevations and sections, a block plan showing the main drainage runs and connections to sewers, together with 'as fitted' drawings of mechanical and electrical services.

A project information manual should be available to the user setting out data on design and construction teams, design criteria (for example, floor loadings), the nature and source of materials. A manual on the operation and care of plant and specialised equipment is required from the design team.

A typical handover meeting would be attended by the contractor's representative, the employer's contract management team (architect, engineer, quantity surveyor, site inspectorate), and representatives of the client (usually members of the commissioning team and any principal departmental managers directly concerned).

In short, if the works comply with the contract requirement, they are to be taken over – that is the sole criterion.

Defects liability period: definition

This is the amount of time stated in the contract (normally six months for building works and twelve for engineering works), and starts on the day of practical completion of the works. The contractor is required to

*Available from the Royal Institute of British Architects (RIBA), 66 Portland Place, London W1.

make good, at his own expense, any defects, shrinkage or other faults which appear during this period and which are due to materials or workmanship not in accordance with the contents of the contract. The architect will provide a schedule of defects and deliver it to the contractor not later than 14 days after the expiration of the defects liability period. The architect may issue instructions whenever necessary to remedy defects within the period.

Faults identified by users

Room-by-room visits by the architect or his representatives are not always enough to spot all the shortcomings in materials and workmanship which, over a period, users are likely to have identified. It is in the interests of the hospital for departmental heads to maintain records of defects as they are noticed and to pass these to the architect at the time of the final inspection.

Issue of the final certificate

Subject to the defects having been made good to the satisfaction of the architect and engineer, the architect will issue to the contractor a certificate to this effect. The engineering subcontractor will be required to carry out an undertaking with the main contractor to make good defects on engineering works which may arise during a further period, normally six months, until the end of the defects liability period of engineering works.

Moratorium on alterations affecting the terms of the defects liability period

Immediately after handover, users are often tempted to embark on a number of alterations to the building, particularly if their views on design differ widely from those of the project team. It is important to defer any contemplated changes until after the defects liability period has expired if their implementation is likely to allow the contractor opportunity to escape his responsibilities.

In some projects it is important, if not almost essential, to start certain work at the earliest possible opportunity after handover. For example, safety legislation may require building alterations before a department can become operational. In such circumstances, the advice of the architect must be sought in case the contractual implications of any alterations need be negotiated with the contractor.

12 The task after handover

The commissioning team's main responsibilities

The team's purpose after handover is to ensure that the final managerial effort satisfactorily completes the task of opening the hospital. The five main responsibilities may be summarised.

1 Exercise careful financial control of the consequences of opening new services, and of any unexpected changes to the programme, because these will affect the health authority's normal pattern of expenditure.

2 Ensure that the programme for building up the work of each department and the opening of patients' services has been agreed by all the relevant managers and in consultation with the medical staff.

3 Concentrate on coordinating this final effort. To achieve this, have frequent meetings and coopt departmental managers whenever appropriate.

4 Ensure that the safety of patients is uppermost in the mind before new services are opened.

5 Gradually review operational systems once the hospital has been open for a little while.

Financial consequences

There will be some non-recurring financial consequences of commissioning which are distinct from the ordinary revenue costs of running the new hospital as its services build up. These extra costs have sometimes been under-estimated – even overlooked – by teams. They are usually incurred by the following activities.

Advertising Special allowance must be made for the big recruitment programme and the need to adopt more imaginative advertising methods during the most intensive period.

Publicity Special brochures and display materials for recruitment and public relations are expensive.

Installation work Works staff, often with the help of extra contract staff, have a big task in putting up extra fittings and installing equipment. More staff may be needed in the works department and the approved establishment may be exceeded during this period.

Alteration schemes Assuming that strict control during construction has prevented any changes to the original design, there will be after handover an accumulation of

small schemes for improving the functional design o f departments. They will usually be justifiable but not all will be essential. Some, though desirable, will have to be weighed against other priorities. A special financial allocation, to be termed a 'commissioning budget', is required to put some of these finishing touches to the building. There may also be larger schemes attributable to changes in legislation, but these are more likely to be charged against capital funds. The effect of such schemes, small or large, on the defects liability period was referred to in the previous chapter (page 64).

Opening ceremony A unique event needs to be matched with adequate funds to provide a memorable occasion (see next chapter, page 71).

Temporary administrative overheads The size of the commissioning programme justifies more administrative and personnel staff up to the time of opening the hospital than will be needed when the organisation has settled down. Financial allowance must be made for this.

Removal expenses and interview expenses It has often escaped the notice of those preparing budgets that the recruitment programme gives rise to extra demands for expenses for interviews and removal. It is quite probable in a large project that a hundred or more staff will be eligible for removal expenses.

Training The intensive training activity will often require help from educational centres outside.

Temporary residential accommodation Many new hospitals have to enlist the help of neighbouring hotels to provide temporary accommodation if there are insufficient residences available at the time of handover.

Temporary storage Warehousing of equipment can be an unavoidable extra expense before handover.

Forgotten equipment In a large scheme, some important items will have been overlooked and not ordered. A small financial reserve should be set aside to purchase urgently required items.

Extra departmental staff Prediction of workload will have determined staffing levels for each department. To encourage departmental managers not to inflate their estimates, it is helpful to offer the prospect of a small reserve sum if they find it essential to have extra staff. Certainly this would be the best solution in a large independent or private hospital. In the National Health Service, however, at a time of minimum growth, any serious staffing shortages have to be considered in the context of the health authority's overall budget and other priorities may be competing for the same funds.

Decanting (relevant in phased schemes) The term 'decanting' describes the task of putting sections of complete departments into temporary accommodation and transferring them later to their permanent location. This is a feature of phased schemes in which the use of accommodation in each phase hardly ever coincides with its final function. Temporary moves have to be contrived, sometimes quite ingeniously, and this often requires extra expenditure to be satisfactory.

As well as these extra costs, the treasurer will have other problems during this complicated period of change. Slippage in the programme at the last moment, even by a matter of weeks, is likely to have an impact on the health authority's expenditure, and to affect cash limits. The treasurer, therefore, needs to be fully involved with the team to be kept informed of any fluctuation in the way services are expected to open, and of progress in recruitment. If other hospitals affected by the project are running down their services and perhaps eventually closing, this too will affect the district's normal budget. The community services will be affected by the new hospital so their expenditure patterns are likely to change.

These financial variations will have been anticipated and calculated in earlier estimates. The *actual* expenditure now has to be monitored very intensively – a much more difficult task than it is when services are relatively static.

Programming the build-up of services

The programme will have been drawn up with considerable precision, rather like a military exercise, so that all departmental managers are committed to carrying through their own contribution. Each department will grow at a different pace. Some will have ample time, whereas others will be hurried into action. Some have to get going before others; for example, portering, telephones, cleaning and works services are needed early. Others, though not operational until the patients arrive, have protracted commissioning tasks and must make an early start. For example, the sterile supply department will require bacteriological checks and lengthy trial runs; the installation and calibration of x-ray machinery will be a long job but must be programmed to be completed within eight weeks of being brought into full use. The sequence for opening departments should be planned well in advance because this will determine the week-by-week timetable for recruitment and the equipment delivery programme. There is a logic to it, though the sequence varies with each project. A typical order, grouping departments into four categories, might be as follows.

Category 1 Partial services required immediately after handover	works department services security and portering stores residential accommodation telephones domestic services central linen supply
Category 2 These require a lengthy period of preparation	sterile supply service (for trial runs) x-ray (for trial runs) operating theatres (for trial runs) medical records (data-processing trials) pharmacy
Category 3 These may be partially opened before patients are admitted	paramedical services outpatients' services

Category 4
These will not be operational until all the departments above have opened } wards

Each department should have a published programme setting out predicted takeover dates, starting dates for positioning equipment, deadlines for having all equipment in place and in working order, and a forecast operational date.

As far as possible, wards should be opened one after the other over a period. Services for inpatients and outpatients should not be opened at the same time. Since the greatest demands on diagnostic services and records are made by inpatients, the number of admissions during the first weeks should be planned with particular care. If the availability of nursing staff is likely to be the critical factor for opening the wards, it is worthwhile predicting in detail how many nurses are likely to be available month by month and the number of beds which that number of nurses can adequately staff. If the project is a major extension of service, it is important that these estimates take account of current turnover rates, because newly appointed staff will not all be additional. Another factor which makes this a complex task is the specialisation of nursing. New staff cannot be regarded as interchangeable.

The exercise in prediction has to be discussed with medical staff because choices will have to be made in deciding the precise sequence of opening the wards. This programme, which in a large project might take more than a year to complete, will influence the growth rates of other departments' workload; for example, the operating theatres. It will also have important implications on the recruitment timetable for appointing other staff; for example, junior medical staff.

Procedure for monitoring the rate of admissions and outpatients' attendances must be thoroughly prepared and ready for implementation as soon as the new hospital opens. The first month of work in the new hospital will be a time of flux, and not all the predictions will come true. Therefore, sound organisational mechanisms for discussing trends and controlling them are essential.

Coordinating the final effort

The period from just before handover until the hospital becomes operational is one of intense activity. New staff are settling in and people are looking forward to working in their new departments. There will be setbacks, and the effect of these on morale have to be overcome. Equipment has to be placed; suppliers have to be chased; crises have to be faced. Works, portering and domestic staff are busy trying to cope with the needs of all departments, hoping – but not necessarily knowing – that somebody is programming their workload. The staff, the public, the press and the other related services all want information. Deadlines which were real suddenly appear unrealistic. All at once there will be muddle, misgivings, enthusiasm and expectation.

The best way to cope with all this and to coordinate the final effort is to make full use of the commissioning team. It should be meeting more frequently, fortnightly at least, perhaps weekly during the last two months before handover. It should be coopting new members and inviting departmental managers for specific agenda items, to discuss interdepartmental problems, and to help create the teamwork which is essential at this time. People can reach breaking point if they cannot see that everybody is under the same pressure. From handover onwards, weekly meetings will be essential.

Immediate action after handover

Suddenly, the building changes hands. The handover certificate has been completed. The tasks for commissioning the departments have been listed. The staff are ready for action. What happens now?

Security and fire precautions

First, make sure the building is secure and that fire precautions are fully effective. With so much of the building unattended in the day and particularly at night, the commissioning team must take steps to provide its own security force or contract this out to a specialist firm.

At the outset, there is usually a large job of sorting out all the keys that have been handed over. A system for keeping these and for issuing them should be decided well in advance as part of the operational system for security.

A large number of 'strangers' are coming together on the site for the first time, so a staff-identity system is essential. This should also allow, perhaps by a colour card system, for installation contractors and similar visitors to be identified. The design of the hospital should have embodied all the necessary security alarm systems. The best ones are those that cannot be seen which have already been incorporated into the building. The temptation to add new devices should be resisted unless there was a serious omission in the original design.

Fire precautions will have been incorporated in the design and the equipment lists, but these will need supplementing by several finishing touches and by giving special attention to training staff who will be unfamiliar with the escape routes and the location of fire fighting equipment. Apart from this comprehensive training effort, there will have to be checks on the marking and painting of certain valves, switches, fire hydrant covers and things of this kind. Fire instruction notices should have been devised and printed and will now need to be put up. Before handover, a checklist of all such requirements must be prepared. Risk of fire is always high in a large public building, but at a time when a new hospital is not fully organised, the building is even more vulnerable. Appendix N, page 124, is a checklist for fire precautions

recommended by the Department of Health and Social Security.

Cleaning

The building will probably need a good general clean, enough for it to be habitable, without overdoing it. The domestic services manager will not want to duplicate effort by sending in cleaning teams while equipment is being moved in. But floor sealing is quite often an important first job.

Checking engineering services

In theory, there should be little need to check services if pre-handover tests have been carried out properly by the contractor. In practice, things can be a bit different. If the hospital engineer has witnessed commissioning tests, many faults can be resolved quickly. But a comprehensive survey of all electrical, water, piped gas and other engineering services has to be carried out by the hospital's own works department. These checks must be done straightaway to give enough time for any remedial work to be done by the contractor. It is not always as easy for him to have the work carried out as quickly as it might be by using hospital staff. Purity testing of medical gases can take a long time. The latest requirements of the Medicines Inspectorate, Health and Safety at Work Executive, and of the environmental health officer, have to be anticipated. The hospital water system should be included, particularly if it has been dormant before coming into daily use, to ensure there is no risk of contamination. To check this, the hospital microbiologist will be required to help the hospital engineer.

Fittings and other installations

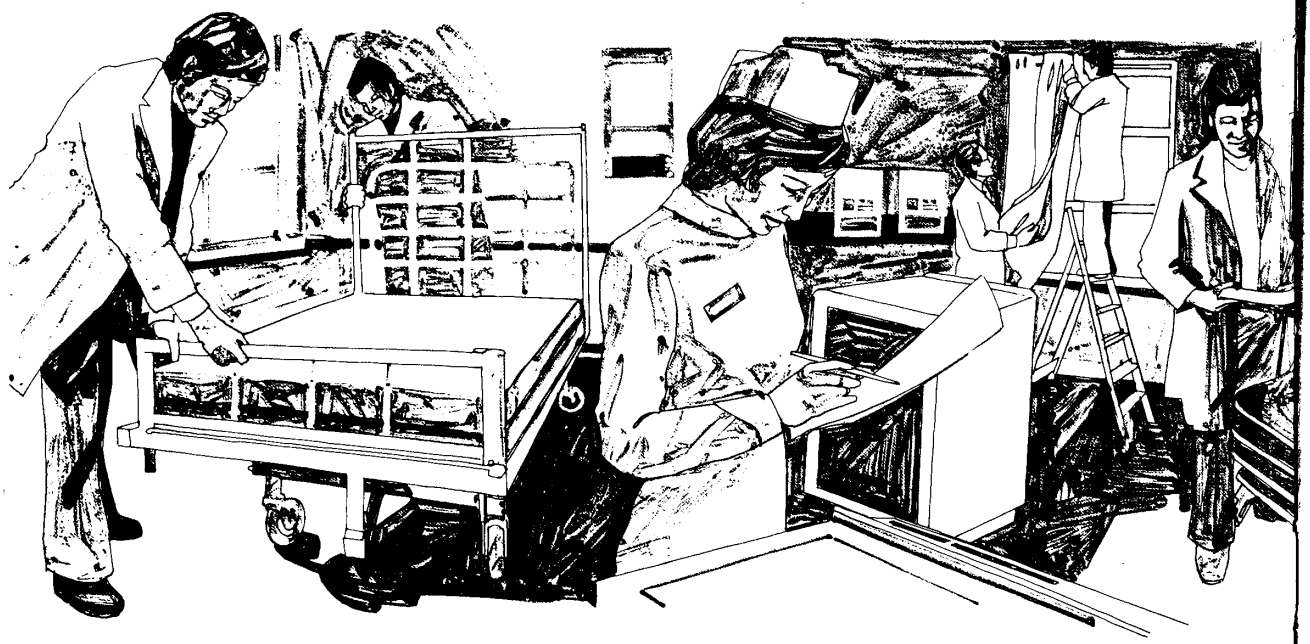
Immediately after handover, carpenters are usually busy putting up extra shelves, supplementary signs and other fittings, despite the original intention of including these requirements in the bills of quantities of the contract. Telephone engineers will probably be around unless all requirements, including the precise location for telephone instruments, have been completed before handover. Electrically operated equipment has to be checked for safety, and plugs require fitting. Electricians, like everybody else, become heavily engaged in the programme of work.

Protecting the building

Moving vast amounts of equipment from place to place can cause considerable damage unless efforts are made to train staff to be particularly careful, and to protect lifts, doors and vulnerable corners. It is worth taking trouble over this; otherwise, signs of wear and tear appear prematurely. The simple expedient of fitting trolley 'fend off' wheels at low cost can save much thoughtless damage.

Equipping

The system for delivering and installing equipment will have been drawn up well in advance. For a small department, it might be better to deliver all equipment to one central point and to rely on the head of department to distribute it to individual rooms. For wards and large departments, it is better to have equipment labelled with individual room numbers so that the porters can deliver items straight to where they should go. Remember that the porters will need enough trolleys and proper lifting



equipment. In addition to permanent equipment, departments will need a wide range of consumable goods: stationery, special forms, cleaning materials, sterile supplies, linen, crockery, provisions, and so on.

In an entirely new hospital, the work necessary to have these things ready must be considered well in advance, particularly documents which require meticulous design work related to an operational system before going through the various stages of printing. The work of preparing forms and other documents is time-consuming and must be part of the total equipment programme. Similarly, staff uniforms, if new styles have been selected, must be ordered well in advance.

To coordinate these efforts to provide a department with its entire needs, departmental managers should have comprehensive lists of all their requirements so that items can be checked off as they are delivered, or chased up if they do not arrive on time. In schemes where some equipment is transferable from an old department, plans and the timetable have to be prepared in fine detail to reduce any disruption of services to the minimum.

Staff training and trial runs

Some staff training will have been done before handover. Training and induction are continuous processes and do not relate merely to a particular period before opening a new hospital. The needs of new staff of the future will be very similar to those of this particular period. On the other hand, there is opportunity and incentive to make a special effort during the final phase of commissioning, because staff can be brought together more easily without disrupting services, and the significance of training is clearly recognised as a prerequisite for establishing efficient services in all departments. Regrettably, the need for this kind of training is not so apparent when hospitals are fully operational.

New systems, new equipment (some of which will be sophisticated), new attitudes, setting high standards, require the back-up of training. Equipment associated with engineering services, for which operational manuals will have been provided, will require training sessions not only for maintenance purposes but also for staff using the equipment day by day. Thus, all types of staff will benefit from training of some kind: it must be provided if a smooth start is to be achieved.

A checklist for departmental managers of tasks after handover

1 Visit the new department regularly to review progress.

2 Prepare a list of key tasks against target dates.

3 Arrange induction and training of new staff, including trial runs of specialised equipment.

4 Keep staff informed about progress as a whole and of any difficulties causing delays.

5 Take a close interest in the needs of staff transferring from an old department to a new one.

6 Check the adequacy of protection of walls and doors before equipment is moved in.

7 Help check equipment delivered to the department.

8 Maintain the security of the department throughout the commissioning period.

9 Keep in touch with the supplies department so that outstanding orders can be chased.

10 In conjunction with the domestic services manager, determine cleaning requirements.

11 Make lists of any engineering services requiring attention.

12 Check the precise location of telephone extensions, relating these to desk positions and wall fittings.

13 Keep in touch with other departmental heads whose services relate to yours.

14 Cooperate and provide help with public relations visits.

15 Keep a record of any building or other similar defects which in due course must be referred to the contractor.

16 Check that all consumable goods, forms and supplementary notices, have been requisitioned.

17 Carry out room-by-room checks for completeness.

18 As soon as the service of the department starts, maintain close supervision of operational systems. Have frequent meetings with staff to discuss any changes that seem necessary.

19 Pass to the administration details of serious design problems so that these can be referred back to the planning authority or be considered if there is to be an evaluation study.

20 Recognise and plan for the time required to fulfil these tasks. This will usually require a complete change of routine, perhaps involving more, if only temporary, delegation of responsibilities to deputies.

Tasks outside the building

Commissioning at the time of handover is considerably eased if the original brief to the design team included a thorough description of all the functions that the grounds have to fulfil, incorporating the requirements for patients, staff and visitors. Although that may have been done and advice on landscaping has been taken, it is probable that some of the work may have to wait until contractors' huts have been removed, or the correct planting season has arrived. Unfortunately, it is not unusual at the time of handover for the site as a whole to be in turmoil. A good look round is usually the only way to identify what needs to be done to separate traffic along its different routes and to help pedestrians find their way to the correct entrance. This is usually a time for improvisation until all signs of contractors, subcontractors and rubbish finally disappear. Putting up extra directional signs and arranging temporary traffic routes while the site is cleared are just two of the tasks often requiring immediate attention.

Where, for reasons of economy, landscaping has been neglected, the commissioning team may have decided to bring in local horticultural expertise and extra resources to improve the appearance of the site. If so, a checklist of main requirements for developing the grounds should be drawn up.

First admissions and review of operational systems

The arrival of the first patient somehow seems to make the whole commissioning task worthwhile. It is an occasion; one which deserves a small informal ceremony and some publicity. However, what is much more important just beforehand, is the final check by the commissioning team that the patients' safety can be assured. Despite all the advice in this book to work towards deadlines, the final warning to the team is DON'T OPEN UNTIL THE HOSPITAL IS READY.

Once the hospital is fully operational there is a temptation, managerially, to relax after the intensive commissioning period. The need to settle down and give the organisation some stability is undeniable. But some of the operational systems drawn up by managers as theoretical documents before most of the staff were appointed will not, in practice, work out. Some mistakes will have been corrected during the trial runs, or as soon as a department has opened. The staff themselves will have contributed ideas to improve working methods, but some undesirable changes will occur through lack of training or bad supervision. To check the effectiveness of all systems, there should be a methodical review, system by system, over the next few months. Operational manuals can then be revised to describe current practice and will retain their practical usefulness instead of becoming archival documents, or being passed on to other projects with an apologetic note explaining that they no longer describe what is now happening!

When does the commissioning team disband?

In most projects, commissioning merges into operational management very quickly, unless there is continuous phasing of different departments being handed over and opened. The commissioning team will probably remain together until all departments are equipped and operational, but not necessarily fully staffed, because the build-up of services may be gradual. Organisationally, the phasing out of the project team and commissioning team may seem to be untidy; but there will be residual problems to solve, usually for a long time, so the administrative machinery must be kept intact even if meetings of teams are no longer necessary. The work of the commissioning team ends in this indeterminate way, but that is as it should be. Commissioning is part of local management. As the commissioning finishes, so the life of the hospital begins.

13 The opening ceremony

All the work that goes into planning and commissioning a new hospital deserves recognition by a special event, usually an opening ceremony of some kind. Care must be taken to invite the most deserving people, and to make sure that as many staff as possible can be involved. The greater the part played by the staff of the hospital and those who have planned it, the better. A blend of formality and gaiety should be created to make an occasion which everyone will enjoy and look back on with pleasure.

The organisation of such an event often seems to become more complex than that of opening the hospital itself. It certainly has to be planned well in advance and the workload must be allowed for. Timing is crucial, particularly if there is a lot of uncertainty about the contractor's programme for completing.

Fixing the date is usually a choice between waiting until the hospital has been in use for some months or holding the event immediately before the first patients are admitted. The former is preferable. It allows more time to absorb any delays which might otherwise create serious difficulties. It also allows the hospital to be brought into use and, as a result, staggers the work required to hold an opening ceremony. But perhaps most important of all, it ensures that the hospital is alive with patients and staff on an occasion when many distinguished guests will be touring the building. They will prefer to see a hospital at work rather than an empty building.

Sometimes a service of dedication forms part of the opening ceremony. But as time is usually limited and many of those present are not closely associated with the work of the hospital, it is probably better to hold a separate dedication service at some other time.

Arrangements for opening ceremonies vary, depending on who is to perform the ceremony and the sort of occasion that the health authority considers appropriate. Whatever the arrangement, it is important to appreciate that the ceremony requires meticulous care in preparation. All the time and thought given to the planning of every detail will be repaid on the day. Here, then, is another checklist.

Protocol: guests, the ceremony itself and tours for guests

1 Decide who is to open the hospital and find a convenient date.

2 Make a careful list of invitations.

3 Decide the form of ceremony: precedence and protocol.

4 Organise seating arrangements: seat reservation system.

5 Plan the official tour and rehearse it.

6 Arrange tours for guests after the official ceremony.

7 Work out the precise timing of the programme of events in advance.

8 Give special thought to invite people who were perhaps involved very early in the project. It is easy to overlook those who have played an important part but are not actively involved at the final stages of commissioning.

9 Arrange car-parking, reception and escorting of guests.

General organisation

10 Appoint one person to coordinate the preparation but spread the responsibility for each detail to as many senior people as possible.

11 Determine cost.

12 Set up an operations room to run the event on the day.

13 Adjust the running of the hospital for the day: alternative lunch arrangements, alterations to car-parking, diverting certain external calls to specific extensions, and so on.

14 Arrange for floral decoration of the hospital.

15 Arrange for security.

16 Arrange for press, radio and television coverage.

17 Arrange for first aid.

18 Produce a brochure to mark the occasion.

19 See to special staging: amplification, flowers and music.

20 Arrange for accommodation for guests (marquees).

21 Set up special signposting to the hospital.

22 See to refreshments for guests.

The interests of staff and the local community

23 Consider how patients can be involved.

24 Involve the staff. Ensure that as many staff as possible take part in the day's proceedings. Consider using contract caterers, for example, so that hospital catering staff can enjoy the event. Do not overlook the interests of night staff and others working shifts.

25 Provide a guard of honour representing different categories of staff.

26 Arrange various viewing points on the tour with pre-arranged groups of staff able to watch from these locations.

27 Arrange 'fringe' activities; for example, a special dance for staff during the evening to round off the event. This often ensures that those who, through limitation of numbers, cannot take part in the formal proceedings, can be invited to enjoy the informal part of the day.

28 Consider viewing arrangements for friends and relatives of staff.

29 Involve the community: voluntary organisations and schoolchildren.

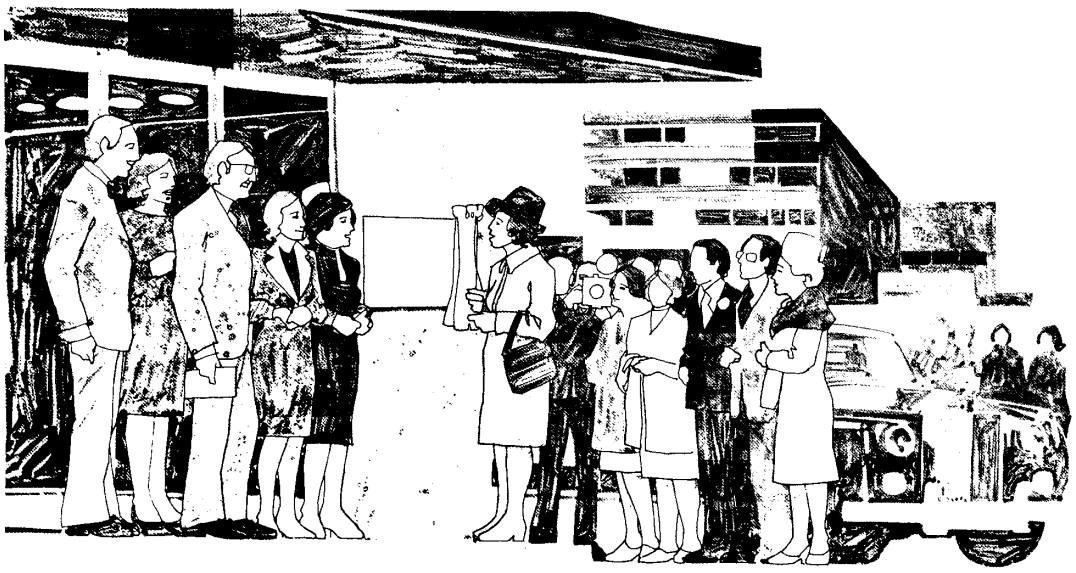
Other useful tips

30 Have an alternative 'wet weather' programme.

31 If possible avoid pay day!

32 Preserve a record of the event: photographs, a film and tape recordings.

Further reading: see reference 26.



14 Evaluation of the design-in-use

An evaluation study of the operation of the hospital in relation to the original brief, planning policies, and to the architect's design, is valuable, mainly for other similar projects not yet started. There are those who advocate evaluation more as a way of rounding off a new project; as an end in itself rather than as a means of helping others or of finding local remedies for deficiencies in the building or its operational systems. Although it may be interesting to see how the designers have 'scored', fault-finding can be demoralising both for operational staff who may be rather disappointed with their new surroundings, and for the planners who may be well aware of shortcomings, having had to compromise standards due to financial constraints.

Despite the apparent virtues of undertaking evaluation studies, it is surprising how few have been carried out in the National Health Service. This poor record needs an explanation, because capital resources, although limited in comparison to what is needed, are relatively extensive as a total amount of public expenditure. Such an investment, therefore, needs to be put to the best possible use. One cause for not evaluating may be the failure to understand that studies need not be elaborate. Another explanation is an awareness that principles of hospital design change rapidly: lessons learned in one decade may not be entirely relevant ten years later. A third reason may be the separation of planners working for the building authority from the users working for the district authority. The latter are in the best position to comment about the project's operational deficiencies, but are unlikely to become involved in another major development. These are not justifiable reasons for not evaluating, but they may explain why so little has been done.

For the foreseeable future, evaluating will become more rather than less important. Therefore, a modest and practical approach is required to motivate planners and users alike to make the effort. The King's Fund report *Evaluating New Hospital Buildings*[2], although its recommendations may need to be modified to simplify the task, usefully summarises the principal objectives of a study.*

*The report, published in 1969, is now out of print, but is available on loan from the King's Fund Centre Library, 126 Albert Street, London NW1 7NF.

1 Evaluation reveals deficiencies in the design that can be remedied fairly easily by small changes to equipment, room layouts, signposting and so on. This information is of immediate use to management because it may be possible to make the necessary modifications quite quickly or, if not, to plan for them over a number of years.

2 It can reveal where previously accepted design principles are giving trouble in practice, thus directing new thought and experiment to overcome the problems.

3 It can reveal design features that have proved to be expensive in terms of running costs.

4 It can reveal where accepted design principles are working well, thus releasing expensive design expertise to concentrate on other, unsolved, problems. It is equally valuable to design teams for other new projects to learn about successful features as well as shortcomings.

The report also gives advice about methodology, dividing this into five parts.

1 Determine the aims.

2 Set up the necessary practical organisation.

3 Gather the necessary information.

4 Analyse the data.

5 Communicate the results.

For most projects a study can be accomplished by means of a local working party, involving a visiting engineer and an architect from the building authority. Short interviews with each head of department will identify a substantial proportion of operational difficulties, but evaluation will clearly be improved if the decision to undertake a study is made well in advance of it being carried out. If that is done, managers can keep a cumulative record of their observations over several months rather than rely on memory at the time they are questioned. The question of when to evaluate what is hard to answer. It is particularly helpful, for example, to look at those design features which either waste or help conserve time. That can be done comparatively soon. Other aspects of a building – for example, the capability to extend or adapt to cope with changes – must wait for a few years before they can be fairly assessed. Similarly, the effectiveness of finishes or of equipment to withstand wear and tear may need several years to be put properly to the test. A study, therefore, has to be selective.

Evaluation takes us beyond the scope of this book. It seems, however, to be an appropriate note on which to end. Design, just like the commissioning process, never attains perfection. All we can hope is that those who will be planning, designing and commissioning new hospital buildings will continue to benefit from those who have faced the same complex and demanding, but also creative and stimulating task.

Further reading: see references 6 and 18.

Appendix A
An example of the functional content of a new district general hospital

(640 beds)

1 Access The DGH will be serving a rural population so more than the usual numbers of patients, visitors and staff will be using private cars. Access and parking for the various locations must suit the design and function of the building. Specific requirements will be as follows.

a main entrance: for outpatients, visitors, admissions and staff

b accident and emergency access for ambulant and non-ambulant patients and for ambulances

c access to obstetric department, gynaecology department and special care baby unit

d access to day hospitals

e access to staff residential area

f access to mortuary

g delivery and collection of all supplies and goods, including segregation of clean and dirty traffic

2 Accident and emergency services The district's main A and E department is at E—-on-Sea Hospital and currently receives 14 000 new patients a year. This is expected to rise to 15 000 when the department is transferred to the DGH in Phase II because the catchment area will be larger. A minor A and E service will be retained at E—-on-Sea Hospital to cope mainly with holiday-makers during the summer.

3 Administration Offices, interview rooms and waiting areas will be provided for the general administration, secretarial and clerical services, for the nursing and non-clinical departments, support services, voluntary service organisers and staff organisation. The medical administration will require the following.

a an office for each consultant, which will be the office for his/her specialty

b office space for junior medical staff

c a seminar room

d office space (possibly sharing) for each consultant's secretarial service

e accommodation for tuition of at least 10 medical students

f offices for the chairmen of professional advisory committees

g relocation on the DGH site for the postgraduate medical centre

4 Catering A central catering complex for all patients and staff is to be provided on the DGH site, and may also serve other hospitals nearby. Facilities will be provided in Phase I which will form part of the eventual full complex.

5 Central sterile supply department Sterile supplies will be received daily from the present department at P—— Hospital. Each clinical department will have CSSD storage facilities and the operating theatres in the DGH when completed will have a theatre sterile supply unit (TSSU). In Phase I a hospital sterile distribution unit (HSDU) will provide a limited service for the wards and departments. (See also HSDU and Operating theatres.)

6 Central telephone installation Internal telephones connecting all parts of the hospital, and external telephones to the General Post Office, will be provided by central installation. The service will also cover arrangements for security and fire precautions.

7 Chapel The chapel at M—— Hospital will be upgraded for use by the DGH. Services for all denominations will be provided, with general, chapel and bedside ministrations.

8 Children's centre The children's centre, with assessment facilities, will remain in the former administrative offices on the M—— Hospital site. In a later phase it will transfer to the DGH. In Phase I, the satellite department at T—— Hospital will close and alternative accommodation provided nearby.

9 Department of medical illustration In Phase I there will be no extension to the present limited service at S—— County Hospital, though it is intended to include offices and a store in the Phase I buildings for the new department which will be provided at the DGH in a later phase.

10 Department of medicine The department is now split between H—— Hospital and E——-on-Sea Hospital and will be centralised in the DGH in Phase II, with 118 beds, including beds for coronary care, chest and infectious diseases.

11 Department of rehabilitation In Phase I, physiotherapy and occupational therapy will be provided in the wards and special requirements and outpatients will be accommodated at S—— County Hospital as at present. A district centre of physical medicine is to be established in the DGH in a later phase. Staff will be allocated from there to the community hospitals which will provide a local service. The physiotherapy department in the new

centre will include a hydrotherapy pool and gymnasium. The occupational therapy department will have a heavy workshop, light workshop and an aids-to-daily-living section.

12 Department of surgery The department is now split between H— Hospital and E—-on-Sea Hospital and will be centralised in the DGH in Phase II, with 86 beds for general surgery, including basic neurology and dental surgery. Some will be used for day cases.

13 Ear, nose and throat department The department now at W— Hospital is in inadequate accommodation. On completion of Phase I it is intended to move the department to better accommodation to be vacated in S— County Hospital, and in a later phase to a new department with 14 beds in the DGH.

14 Electrocardiographic department This service will be provided in the outpatient department of the DGH at a later phase. In Phase I, the present department at S— County Hospital will provide a service using a mobile machine.

15 Electroencephalography The service will continue at P— Hospital and facilities will be available in the outpatient department of the DGH. The Phase I beds are thought unlikely to produce extra demands. Special cases will be seen at S— County Hospital. The service will be monitored to ascertain whether a department will be required in the DGH.

16 Geriatric assessment department A department with 54 beds is included in Phase I. It will operate in conjunction with the 56 beds now at S— County Hospital and both units will offer assessment and rehabilitation services. The physical medicine department will remain at S— County Hospital until the new physical medicine centre is provided at the DGH at a later phase, and rehabilitation work will be done in the wards. Patients requiring day treatment will be taken to the small department at M— Hospital and those requiring treatment with special equipment will go to S— County Hospital. Subsequent phases will include more assessment beds. Before completion of Phase I, an extra 28 beds at S— County Hospital will alleviate the shortage for the time being. Those beds will be used for long-stay patients when the assessment facilities at the DGH are completed. In the DGH all geriatric assessment beds will be on the same floor, close to the medical wards and the physical medicine department. The design will allow the assessment wards to be used by men and women.

17 Gynaecology ward A ward of 28 beds is required in Phase I. Another 5 beds in the obstetric department can be used for gynaecology if required. The ward will not be transferred to another part of the hospital on completion of the DGH development.

18 Hospital sterile distribution unit (HSDU) An HSDU will be provided at a later phase. The functional content schedule includes provision to serve six main operating theatres, the accident theatre, and packs for all wards and departments. In Phase I, a limited facility will be provided in association with the operating theatres. (See also CSSD and Operating theatres.)

19 Incinerator A new incinerator will be provided in Phase I as part of the works department. The local authority has advised that it cannot undertake the collection of burnable materials.

20 Laundry A laundry is not proposed for the DGH site. All laundering will be done at N— Hospital laundry which is to be expanded because the laundry at T— Hospital is to be closed. The expansion is scheduled to be completed for the end of Phase I.

21 Medical records The department will accommodate the district's master index of records and storage of records on the DGH site. In Phase I a small records unit will be established, with an outpatients' reception centre, a working area, medical secretaries' offices and storage for current records.

22 Mental handicap service The district will continue the region's policy of establishing hospital units locally. It is considered inappropriate to have a unit on the DGH site.

23 Mental illness service (acute) A unit for acute mental illness will be included in a later phase. It will include 25 day places.

24 Mental illness service (long-stay) Beds for long-stay patients are not included in the DGH. It is considered that the patients would be more suitably housed in smaller units, possibly on community hospital sites.

25 Mental illness service (severely infirm elderly) It is not intended to include severely infirm elderly patients in the DGH. It is considered that they would be more suitably housed in the community hospitals. In a later phase, a psychogeriatric assessment ward will form part of the geriatric assessment and it will include a 20-place day hospital.

26 Mortuary and postmortem facilities In Phase I the main facility will remain at S— County Hospital. It has 15 mechanically cooled body store positions, three super-cooled positions, two postmortem tables, and in Phase I nine cooled body storage units and viewing rooms will be added. In a later phase more comprehensive facilities will be provided. The storage facility is above the Building Note standard because the service accommodates bodies for the coroners.

27 Nurse training The main training school is at P— Hospital and other hospitals provide classroom and tutorial accommodation. A nurse education department is planned in the DGH for 70 to 100 trainees. It will share

some facilities with the postgraduate medical centre. In Phase I midwifery education will have its own accommodation in the obstetric department in the DGH.

28 Obstetric department The two departments, at T— Hospital and S— County Hospital, will combine in one department of 60 beds in Phase I. Five beds will be used for obstetrics or gynaecology. It is not planned to increase the number of beds in later phases. The contents of the department will follow the Interim Guidance on Maternity Departments.

29 Operating theatres The DGH will have a total of 266 beds in the following surgical specialties: 86 general surgery, including basic neurology and dental surgery; 56 trauma and orthopaedic; 12 ophthalmology; 10 children; 60 obstetrics and gynaecology; 14 ear, nose and throat. Six theatres will eventually be required. Two theatres will be included in Phase I for obstetric and gynaecology. (See also CSSD and HSDU.)

30 Ophthalmology The department now in a building next to W— Hospital will transfer to the DGH at a later phase.

31 Outpatients' clinics The policy of decentralised clinics will continue. The community hospitals will have clinics in all the major specialties, the distribution to be clarified as the content of each phase is planned in detail. In Phase I there will be no changes to the present antenatal and postnatal clinics. The new obstetric department will take on the obstetric outpatients service and the gynaecology clinic now at S— County Hospital.

32 Pathology laboratory A new laboratory for the district is included in Phase I, near the main buildings but separate as a fire precaution. The schedule of accommodation will follow the guidance in Hospital Building Note 15.

33 Paediatrics The paediatric and child assessment departments are now on two hospital sites. The new centralised department, to include child and adolescent psychiatry, will be in Phase II.

34 Pharmacy A new district pharmaceutical department will buy, dispense, supply and control all pharmaceutical products and will provide an information service. In Phase I, the pharmacy at S— County Hospital, which also serves the community hospitals, will be retained. Radioactive materials will continue to be dealt with in S— County.

35 Radiography A department with 8 diagnostic rooms will be provided for inpatients, outpatients, accident cases and general practitioner referrals. Two of these rooms, one for general radiography and one for ultrasound examination, will be included in Phase I.

36 Social work Accommodation in the outpatients' department will be provided for hospital-based social workers. Provision will be made for those staff working in the specialties to be accommodated in Phase I.

37 Special care baby unit A unit of 15 cots will be sited close to the theatres and labour ward. The accommodation will follow that listed in Interim Guidance for Maternity Departments, except that a central milk kitchen will not be required.

38 Staff changing accommodation Staff in pathology, catering, works and gardening will have facilities in their own departments. Special facilities will be provided in barrier areas such as the theatres and special care units. Other staff will be accommodated in a central area which will include rest rooms and a common room for non-resident staff. This will all be provided in Phase I.

39 Staff occupational health service The service will transfer to the DGH in a later phase. In Phase I a consultation and treatment sub-unit will be provided.

40 Staff residence Residential accommodation will be provided on the DGH site for staff who are required to live in or be on call. Other staff will be provided with accommodation within easy walking distance of the hospital.

41 Supplies A new distribution centre is to be provided in Phase I, for the receipt, recording, inspection, storage and distribution of all goods except pharmaceuticals, CSSD and HSDU supplies and some workshop items.

42 Transport Hospital transport will be garaged and maintained mainly off site, but some garages will be provided for vehicles operating on and from the site.

43 Trauma and orthopaedics The main department is at E— on-Sea Hospital and uses beds at T— Hospital for convalescent patients. A central department is proposed for the DGH in Phase II.

44 Works department The department at S— County Hospital will not be able to cope with the added requirements of the DGH. It is proposed in Phase I to include a workshop of sufficient capacity to provide a maintenance service. The department will be enlarged in later phases.

Appendix B Project management of major capital schemes

By referring to this brief account, those concerned with commissioning may more easily see how their task fits into the context of the overall management of a major hospital project. Chapter 2 explains the relationship between the two quite distinct teams needed to accomplish a major new development: the project team, incorporating the design team, and a commissioning team. This appendix also defines some of the terms commonly used, such as 'variation orders' and 'PC sums', which those new to commissioning will soon need to understand.

Work of the project team: important role of the project administrator

The project team carries the project forward from the original brief through the procedural stages and is responsible for ensuring that the plan for work is executed within the approved cost and predetermined time span. During the early stages, when it is particularly important to get off to a flying start, the team will be concerned with operational policies, schedules of accommodation, sketch designs and room layout drawings. Through working groups and other meetings there is an immense amount of detailed work to be done. Later there will be decisions to be taken on design and on various options within the cost limits. Subsequently the team's main task will be to control the organisation and financial management of the building programme.

Its membership at the outset will consist of representatives from the planning authority and from those ultimately responsible for the management of the building. The team should be led by a coordinator (usually an administrator) and should include a medical officer, nursing officer, architect, engineer and quantity surveyor. Other specialists such as a treasurer and a supplies officer should be coopted or consulted when the need for their advice arises.

A project administrator is required to plan the work of the team, to organise and to participate in its meetings, to record and give effect to its decisions, and to personify the client in the important client-architect relationship. He should provide the driving force which ensures that all work to be done by the client is duly accomplished.

When construction work is under way, the project team has a vital responsibility to review building progress regularly, mainly to ensure that completion dates do not slip back unless exceptional circumstances make this inevitable. Representatives of local management require information throughout the commissioning period so that delays of any sort or, more important still, any doubts about completing the building on time, can be assessed and used to adjust, where necessary, other programmes of commissioning work. For example, a planned recruitment programme for all staff may need to be put back; delivery dates for equipment may have to be changed; there may be one particular senior appointment which it would be preferable to defer; or at the eleventh hour plans to admit patients may have to be cancelled.

The project administrator has another important role. Since he represents the client, he is the formal link between local management and the architect (who in turn is the formal link with the contractor). Although good informal relationships between all those involved in the project are essential to bring about a successful conclusion, proper use of the formal administrative channels of communication is equally important. The project administrator therefore has a key responsibility to create an administrative structure which is properly used by all members of the team and which is seen to be effective in tackling what will always be a large, arduous programme of work, multiprofessional in every way, often made difficult with legal and contractual problems, and always involving large sums of capital money.

Obviously the work of a project team, its composition, whether it is accountable to a regional or district health authority, will depend mainly on the size of the scheme. There will be some circumstances in which the work of a commissioning team and project team can be combined into one body. However, for large projects it would normally be appropriate for the RHA to set up a project team with responsibilities mainly for design and building.

Project financial control

Eight objectives are to be achieved to establish an effective system of project financial control.

1 The capital costs of the building and of equipment must be kept within the limits laid down by DHSS.

2 The revenue consequences of the project must be contained within the budget set by the district health authority.

3 A cumulative record of the capital budget must be maintained, updated as necessary, for the cost of variation orders, works instructions and fluctuations in wage rates and prices.

4 A cumulative record of value of completed works set

against actual payments must be maintained to avoid overspending approved allocations.

5 Any actions or defaults which might cause delays and lead to the health authority becoming liable for financial claims by the contractor must be prevented.

6 It must be ensured that any variations are only approved once the financial consequences have been assessed and fully considered by the project team. A limit should be placed on the cost of variations that may be given without approval of the controlling authority.

7 The use of contingency monies must be controlled.

8 The final account should be audited before the final certificate is issued (or provision made for subsequent adjustment), without prejudice, of course, to the responsibility of the architect.

Overriding this control of the individual scheme will be the regional or district authority's overall capital financial strategy bringing all projects within the authority's annual cash limits.

The cost control of building schemes falls into two phases, pre-contract and post-contract. There are two main objectives in the pre-contract phase.

1 A realistic estimate must be determined as early as possible to establish a budget cost within which the designers are required to work.

2 Acceptable tenders must be within the agreed cost limits.

It is at this early stage of project management that the decisions with the greatest influence on cost are taken; these are the content of the scheme, the site and the building shape. The economics achieved later in planning and construction may be significant in absolute terms, but marginal compared with the effect of these early decisions. Once the best and most economical solution has been found, a realistic timetable for going out to tender must be drawn up. It is essential to put back a planned start date rather than go to tender with an inadequately prepared scheme. Short cuts in planning often have serious consequences. The tenderer must have adequate information to enable him to tender accurately.

Post-contract cost control aims to ensure that the final account for the final contract sum is an accurate derivation of the original contract sum adjusted by permissible fluctuations due to cost increases of labour and material and other contractually payable sums. The written procedure for dealing with variation orders is particularly important, partly because the contractor may claim extra payment for expense incurred as a result of complying with an order. Once the contract has been signed, the contractor must receive step-by-step drawings and properly coordinated information. Delay in providing these is one of the commonest causes of contract delay, and of contractor's claims.

In turn, postponements of handover can necessitate extra expenditure on buildings due to be replaced and can waste revenue expenditure if recruitment programmes are so committed that staff appointments either have already been made or cannot easily be deferred. Loss of use of the investment in the new building is another expense, a factor often disregarded because there is no cash flow to measure.

Throughout the contract period there must be an effective system for keeping an accurate and up-to-date record of actual and predicted expenditure, and for advising the project team sufficiently early to ensure that overspending does not occur. The financial management of a major project clearly requires a formal procedure, with the respective roles of the architect, the project administrator and the regional treasurer clearly defined. It is part of the project administrator's role to ensure that information is provided regularly, and that matters requiring variation orders are carefully presented to ensure that financial consequences are properly assessed. The following definitions in simplified form may be helpful. They distinguish the various financial terms frequently discussed in project team meetings.

Variations

A variation to the contract arises when instructions are issued which will alter in any way the plans and specifications which form part of the original contract documents. Some will lead to additional cost, others might make a saving. Careful recording and control of all variations is therefore essential.

There are two categories of variation.

1 Variations forced on the architect, engineer and client by circumstances which would not be anticipated by any normal test or examination and which are necessary to complete the work as far as possible as originally envisaged. These are true contingency variations, for example a geological fault not shown in trial hole borings before work began.

2 Variations where the client has freedom of choice. Basically these should not occur. If they are requested, an essential requirement is that they be deferred as post handover modifications against which a capital reserve might be available quite independent of the contract. This is referred to again in the next section.

Prime cost sums (PC sums)

These are sums of money inserted in the bills of quantities to cover the purchase of items from suppliers to be nominated, or the cost of supplying and fixing items by a subcontractor to be nominated.

In every possible case PC sums should be based on firm prices or quotations obtained as late as possible before going out to tender.

Provisional sums

These are sums of money provided in the bills of quantities against items which, at the time of preparing the bills of

quantities, were known to be required but were not prepared in detail. These items should be kept to an absolute minimum.

Provisional items

These are provisional sums or quantities in the bills of quantities for items, for example, foundations, which have at that stage been only provisionally measured. Remeasurement will take place during and at the completion of the contract and final costs agreed.

Proposals to change original brief

The long period from the earliest beginnings to completion, perhaps seven or more years, makes inevitable the many attempts to alter the original brief. Rapid development in hospital practice or 'progressive' managers and doctors taking over from their more cautious predecessors, give rise either to requests or, more frequently, determined pressures to make changes. The arguments and pleas are always the same: 'unless changes are made before completion there will never be opportunities afterwards, and in any case it just will not work'.

The project team should be ready for these situations – they occur in all major schemes – and operate a firm policy. Changes during the contract period will almost certainly disrupt the contractor's programme and hence will be very expensive – the worst kind of variation order!

Once a policy has been firmly established it should be rigidly applied, leaving the door only slightly open for exceptional requests which probably will fall into one of two categories: alterations required for safety purposes, and alterations essential for the operation of the building.

To meet these eventualities, contingency sums should be set aside, and in all cases any request to be funded in this way should be scrutinised carefully by the full project team.

To help make this policy succeed, it is invaluable to have a small reserve of capital funds available to the hospital during the year following the expiry of the defects liability period. This is rarely offered, mainly because competition for capital monies is so strong that it is usually felt the new hospital has had its full share and other new projects should now have the highest priority. This is an understandable policy. On the other hand, new hospitals bring with them new commitments, financial and others. By having such a reserve, pressures to make changes, some of which will be extremely important and fully justified, can be withstood until after handover. Hospital architects increasingly allow in their design for buildings to be capable of alteration or expansion so that subsequent changes are not too difficult to make. There is also the merit that the experience of running the hospital will have identified the real working needs more precisely, and priorities for using such a reserve can be assessed more equitably.

Appendix C Reading architects' and engineers' drawings

It is inevitable that members of staff who become involved with planning find that they are using drawings instead of words as a way of developing, expressing or communicating their ideas. There are great advantages in this because, in many ways, drawings are better than words when it comes to describing something which will one day exist as a three dimensional reality. Qualities such as volume, space and layout are elusive when translated into words. It is no accident that the only really effective way to express something like a spiral is to make either a gesture or a sketch. Words would be longwinded and imprecise. But it is also true that most people have little experience in using or 'reading' drawings and that many confusions arise because the architect's drawings are misinterpreted. The following brief notes are an attempt to suggest ways in which some of the problems can be avoided.

Perhaps the most important point to be clear about is the function of any particular drawing or set of drawings. Are they, for example, intended only to demonstrate the general principles of a future building or do they, instead, give precise information about already agreed details of layout and appearance? The answers to questions of this kind are normally fairly clear from the appearance of the drawings but the viewer does not always appreciate the difference in terms of what is expected from him. It is worthwhile to be certain about what decisions relate to what drawings and to ask how they are intended to help in decision making. If this is done it should be possible to relate successive sets of drawings to the commissioning programme and to move in an orderly way through a hierarchy of drawings and decisions. This will normally proceed from the general and rather ill-defined to the particular and better defined. At a final stage the drawings will begin to change from being tools to help in decision making to being instructions to the contractor about how he should construct the building.

Scale is an element which can be specially confusing to the layman. It is hard to make the transfer from a relatively small, flat piece of paper to a room or building of a quite different size. It is, therefore, worthwhile to make a deliberate effort to come to a good understanding of the scale of any drawing that may be under review. Perhaps the only really effective way of doing this is to set up various means of comparison. The size of a room, for example, will become easier to envisage if typical pieces of furniture (drawn to the same scale) are located in it, or if it is compared with an existing space of a similar size. The adequacy or inadequacy of a car park or access road is more easily foreseen if the movement of cars and lorries is played out in miniature on the drawings. Comparison of the known with the unknown provides a means of evaluating something which will exist in the future.

Drawings call for the exercise of imagination. Apart from problems that may be caused by the misinterpretation of specific symbols, the real challenge to somebody involved in planning is to make an attempt to know what it will be like to live and work in the proposed structures. Quite simple exercises can be practised to assist in developing this kind of understanding. It is useful to try to imagine what a walk through the building would be like: what would be seen from the entrance; from the reception desk; who would be where at any particular time of day; how would it be at night; would it be easy to find the lavatories; what would those big windows look like on a wet day? – and so on through the drawings, attempting to interpret them from the point of view of a future patient or member of staff. A similar approach can be taken to the more detailed plan of individual rooms: imagine what it would be like to be in the rooms, to look out of the window; pretend to carry out the work which the room is supposed to make possible. After only a little experience, such an approach to drawings becomes almost automatic, but in the early stages it may be useful to go through the necessary steps quite formally. The aim is to make the drawings come alive and work for you as a way of improving understanding. The overlays on the illustrations that follow are an attempt to express this idea in graphic terms.

Terminology

At a planning course held in 1964 at Leeds University, Jake Brown BA RIBA, of the then South West Metropolitan Regional Hospital Board, gave a lecture on *Aids to Understanding Architectural Drawings*. He has given the King's Fund permission to use an extract from his talk. After offering a useful classification of functions of various types of drawings, his notes defined some of the terms in common use.

'Reading a plan' This means the interpretation or understanding of a plan through knowledge of the conventions employed.

Plan A 'plan' itself is a diagram or drawing to a consistent scale showing the arrangement of rooms, circulation space, furniture and equipment in a building. The convention employed is one of having cut the building through horizontally and then looking down directly on to the disposition of walls and partitions. All openings such as windows are normally indicated whether at high

or low level. A basic working drawing plan can contain a great range of information: for example door numbers, room numbers, room names, floor finishes, lighting and service points, wall finishes, window type, dimensions.

Section A 'section' is a vertical cut through a building showing floor heights, thickness of structure and the interior faces of rooms. These cuts may be staggered and the place at which a 'section' is taken is shown by a line on the plan. Various types of line are adopted, but in all cases some indication of which way one is looking onto the section is given.

Elevations The term 'elevation' describes the drawing of the outside sides or faces of a building showing windows, doors and external materials, and relationship to other buildings. The drawing can be a simple diagrammatic statement, or elaborately shaded and coloured to increase its effect. Elevations are differentiated from each other by orientation: an elevation facing south is a south elevation. Alternatively, one can say front or back elevation or 'elevation to High Street'.

Detail and detailing A detail is a large scale drawing showing exactly how minor elements such as window sections, handrails, balustrades, joinery fitments, of a building must be fabricated.

Axonometric: isometric: perspective These are terms applied to drawings which represent ways of presenting the building or room 'in the round' or in three dimensions. The first two are geometrical methods showing all dimensions drawn to scale, but with the 'horizontal' lines all drawn either at 30° (isometric) or 45° (axonometric) to the base line. Thus the object is shown tilted toward the 'spectator'. A perspective is a sketch varying in elaboration and degree of finish, which may be freehand or more formal in that it employs a 'vanishing point' and is set up by geometrical means.

Shadow projection This describes the use of projected shadows to give an apparent depth and volume to two dimensional drawings. It may be employed on block plans to differentiate a tall block from a lower building, or on elevation to show the projection of a balcony or similar feature.

Drawings in more detail

It is not possible in the context of this publication to go into more detail about the specific signs, symbols, scales and abbreviations used in preparing architectural and engineering drawings. Beyond a certain point it is a topic that requires a textbook of its own. It is suggested, in any case, that in a commissioning team, architects and engineers have a considerable responsibility to explain their drawings clearly and to help their colleagues to understand what it is that is to be built. Other members of a commissioning team should not be embarrassed to ask questions even if they turn out to be, in fact, answered in the drawings. It is up to the team to probe the drawings and to ask for whatever explanations are necessary to enable them, with their varied specialist backgrounds, to understand the architectural proposals.

Further reading: see reference 29.

The illustration opposite shows a floor in the new York District General Hospital. It is reproduced by courtesy of the architects, Llewellyn-Davies, Weeks, Forestier-Walker and Bor. Here is their description of this part of the building:

'The main operating theatre suite contains ten theatres. Designed in pairs, each pair shares a 'special purpose' room whose function can be determined later. A theatre sterile supply unit serves the department and, in the initial years, will also provide packs for the remainder of the hospital until the city central sterile supply depot is complete. Patients will be transferred in a reception area and wait in a holding area nearby until the theatre staff are ready to receive them. The recovery area is in the centre of the clean zone. A disposal corridor exists for convenience, and may also be used during the training of nurses. They can view the theatres through glazed panels. Changing facilities are at ground level and the plant rooms are above, so that trunking and damper controls are minimised.'

This is a relatively small-scale layout plan showing a floor in a large hospital. The kind of questions which it can appropriately clarify are, therefore, to do with broad issues such as circulation, the relationship between rooms and the effectiveness of the conception as a whole.

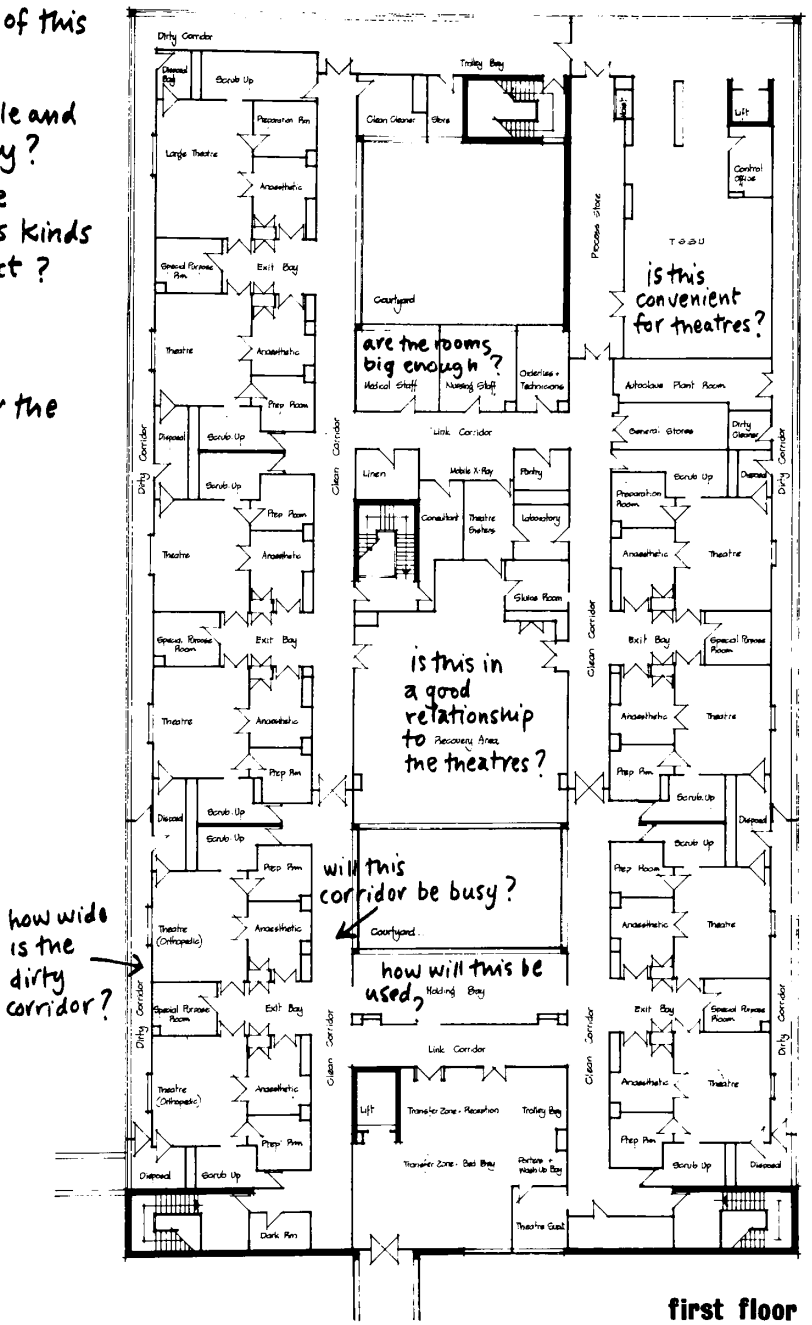
Is the general layout of this floor satisfactory?

Will the flow of people and supplies run smoothly?

Are there likely to be points where various kinds of traffic will conflict?

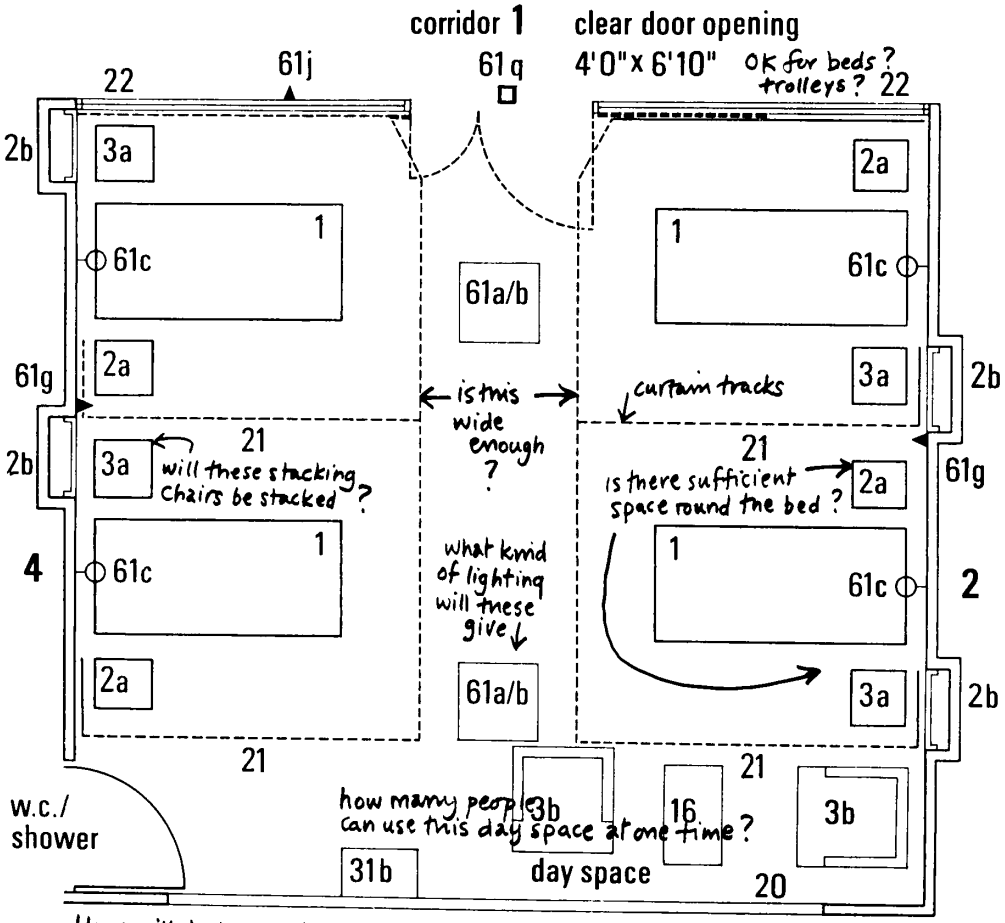
Has each suite the necessary facilities?

Does the plan answer the brief?



first floor

OPERATING THEATRES



How will this ward work in detail?

Will it accommodate the necessary nursing procedures?

Can meals be served easily?

What about privacy?

Does it answer the brief?

Number	Item
1	Bed 6′ 9″ x 3′ 0″
2a	Locker, bedside/overbed table
2b	Locker, clothes, with removable lining, hat shelf and hanging rail
3a	Chair, stacking
3b	Chair, easy/certain areas with tray
16	rest (small)
20	Curtains and track or venetian blinds/outside windows
21	Curtains and track/bed cubicle/top 2′ 0″ mesh ventilation
22	Curtains and track/observation panels
26	Oxygen point/one per bed in intensive care areas
27	Suction point/one per bed in intensive care areas
31b	WHB 22″ x 17″ with wrist action taps, height from floor 2′ 7″
41	Paper towel dispenser
42	Paper towel disposal bin (pedal)
50	Protection strip/12″ deep on walls and doors: omit on window wall
61a	Light, general
61b	Light, night
61c	Light, bedhead
61g	Socket outlet 13 amp/4 between two beds in intensive care areas
61j	Socket outlet 30 amp x-ray within 30ft of beds/in corridor
61q	Nurse-call system indicator and reset
61v	Telephone external/patients' use
62	Bedhead unit
62a	Socket outlet 13 amp
62b	Shaver outlet
62c	Call system patient/nurse
62d	Radio control
62e	Bed light switch and dimmer

The illustration above shows a large-scale layout plan showing a four bed ward in considerable detail. It is possible to use such a drawing to clarify a great variety of points in connection with the day-to-day functioning of the proposed design.

Appendix D How commissioning fits into Capricode

Capricode is the procedure for health building schemes developed by the Department of Health and Social Security. The procedure, described in a series of notes published by the DHSS, provides a system for implementing capital schemes, from conception, through design and construction to the commissioning and ultimate evaluation of the completed building. It is aimed at ensuring that schemes are advanced smoothly from each stage to the next and are developed with due regard to carefully defined objectives, capital cost control of the building, the revenue consequences and an outline timetable for completing the project. These are the six steps.

Stage 1 Outline project intentions

This is the stage when the scheme is drawn up in the broadest terms. The need for the scheme must be identified and its functional content has to be described. For example, if it is a new hospital, it must describe the extent to which its facilities replace or supplement existing services. All the options for achieving the planning objective must be compared. This stage will also identify both capital and revenue costs and incorporate an outline timetable for planning and building the unit. If planning is to be proposed, a design team is formally set up.

Stage 2 Design brief and budget cost

This stage develops the functional content into schedules of accommodation, and requires the completion of individual room data sheets. These will include specifying environmental conditions, fittings, essential finishes and individual items of equipment for each room and circulation area. The siting of the project, usually known beforehand, has to be finally decided, and most important of all, both buildings and equipment capital costs, as well as revenue consequences, must be quantified and approved, including agreement as to where the money is to come from. Sketch plans are produced and the final brief to the design team is eventually adopted. It is during this stage that local management has to start developing operational policies, many of which will have a bearing on design and running costs, and in some cases will fundamentally form part of the entire task of capital planning.

Stage 3 Working drawings and preparing to go out to tender

During this stage, most of the task is in the hands of the professional design team. The brief is converted into working drawings with plans produced to show the detailed layout of each room together with the location of engineering services. Towards the end of this stage the scheme is ready to go out to tender and the local commissioning team should be set up.

Stage 4 Construction

The local commissioning team is busy during this period, keeping in close touch with the project team which has responsibility for monitoring progress by the contractor. Developing operational systems from the original operational policies, scheduling equipment and preparing the manpower recruitment plan are the first tasks to be undertaken, all three of which are substantial.

Stage 5 Final commissioning

Towards the end of construction, the engineering commissioning task, a major one in itself, has to be undertaken, preferably in conjunction with the district or hospital engineer, who requires a good understanding of the plant and engineering services to operate and maintain them properly after handover. Administratively, the work of the commissioning team reaches its climax as the building is handed over and is prepared for operation. Installation of equipment, final recruitment of staff and their training, complete the task before the first patients are admitted.

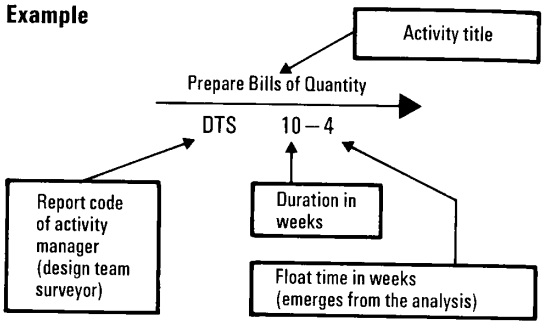
Stage 6 Evaluation

Although this is often neglected, the Capricode system includes evaluation of the project as the final stage. There is no doubt that more should be done to identify shortcomings in design and equipment to benefit other new schemes, provided of course that a distinction is drawn between actual faults and compromise solutions accepted by designers and users as a result of financial constraints.

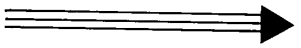
Note: Capricode was being reviewed jointly by the DHSS and the NHS when this book went to press.

Appendix E Critical path analysis: a brief explanation

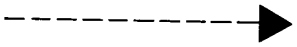
Example



The **critical activities** emerging from analysis of the network are indicated by an additional line above and below the main line.



A **dummy activity** is shown as a broken line and has no duration – it is used only to indicate logical interdependence between events.



Events are shown by three types of symbol, each of which can be drawn in a vertically extended form to allow the associated activities to be drawn horizontally. A **master event** is shown by a circle. Four sectors are used for relevant figures as follows.

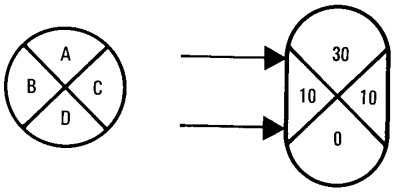
A = event reference number

B = earliest possible time for completion of prior activities

C = latest possible time for completion of prior activities

D = slack (C—B)

B, C and D are usually shown as week numbers – each project has its own reference dates and the master network chart will include a table linking week numbers with calendar dates.



Definition

'Critical path analysis' and 'network analysis' are generic terms for a number of sophisticated methods of planning and controlling complex projects by use of a chart depicting a network of the factors involved, and their interdependence. The technique began to be used in the late 1950s and is still developing to fit new requirements.

The chart can either be produced by a computer as a graphical representation of the results of the analysis, or drawn by hand and used by the planner to perform the analysis. By exhaustive definition of the elements of the project, and estimating the time necessary to achieve them, an accurate overall conclusion can be reached on the completion time; and factors critical to meeting the schedule emerge from the network.

The effects of delay or early completion of sub-sections can be examined and, particularly if a computer is used, it is possible to compare the effects of adopting alternative ways of organising the schedule.

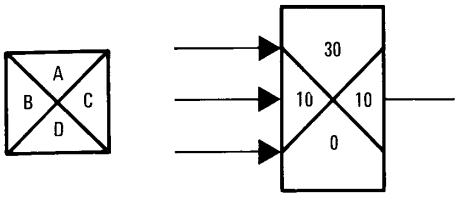
Main elements

The main elements of the network are **activities** and **events**. An activity is a factor which takes time to complete and usually demands resources. An event is merely a notional point in time at which one set of activities gives way to another. The important point to note is that no activity subsequent to an event can begin until *all* activities before that event have been completed. The symbols used to indicate events on the chart incorporate the earliest and latest dates of which the events can take place – from which it can be seen that the *longest* pathway (in terms of elapsed time) between events is the **critical path**.

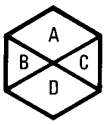
Symbols used

Activities are shown as horizontal lines on the chart, proceeding from left to right, but the direction is indicated explicitly by an arrow head on the line. The length of the line is *not* used to indicate elapsed time, but the legends attached to the line show the time involved.

A **subnetwork event** links activities in a small section of the network and begins and ends with a master event. The same annotation convention is used.



An **interface event** indicates a link between two or more networks. This is necessary for clarity in reading the overall chart, in the same way that individual specialist tradesmen are supplied with architects' plans to show them where their fittings should be positioned.



An important part of using the network chart is regular review of progress. Vertical lines are ruled across all activities in progress or completed at the time of updating and changes to the critical path are examined. This highlights where delays have occurred or will occur in the future.

Example

The two diagrams show a very small section of a major building project. The first diagram is an extract from the master chart and consists only of **master events**. The second diagram expands the activity 'B' which follows the master event 410, and consists of a series of **subnetwork events**. Notice also that one **interface event** is shown, indicating that the activity 'collate bills' cannot begin until the activities on another chart (02A) are complete.

Diagram I

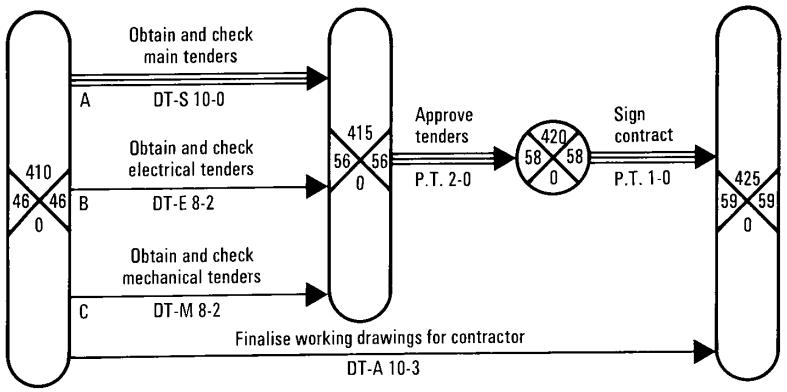
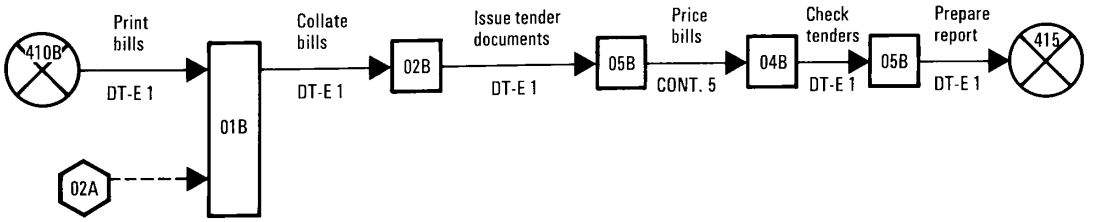


Diagram II



Appendix F Schedule of unexpected problems

(based on experiences of new hospitals)

There was inadequate provision in the design for requirements such as inservice training, suitably placed on-call rooms, occupational health, offices for junior medical staff and storage of 'dead records'.

Opening ceremony booked weeks in advance had to be postponed because of delays to the handover of buildings.

New wards could not be opened because adequate numbers of staff had not been recruited.

New departments were opened in a makeshift way with borrowed equipment.

Newly-recruited staff left before services had even started due to serious delays to the commissioning programme.

Opening operating theatres was delayed because major engineering faults were, first of all, not identified before handover, and then not expeditiously put right. It was particularly difficult to get the subcontractor back to the site to help deal with a major engineering problem.

Employees refused to move from old hospital to help staff the new buildings.

Opening a department was delayed at the last minute because an essential piece of equipment had not been delivered on the date promised.

Industrial action within a firm supplying essential goods caused unexpected disruption to the equipment programme. For example, carpet-laying in residences was postponed at the last moment.

Consignments of supplies were damaged by water coming through the ceiling.

Lack of documentation of early planning decisions created confusion amongst newly-appointed departmental heads who were anxious to understand the background to the project as soon as possible after taking up appointment.

Serious problems of morale resulted from the frustrating experience of opening a new department for which there had been a long-standing need, only to have to close it again after a short while because major alterations had to be carried out.

The opening ceremony had to be rearranged because a prominent politician invited to perform the ceremony lost office at a general election.

Major alteration had to be carried out due to new legislation.

The introduction of new fire regulations between design and completion required extensive alterations to the corridor ceilings of a geriatric ward after handover and caused considerable delay to commissioning.

The lack of joint operational planning with the ambulance authority caused serious difficulties over the need to maintain ambulance services on bank holidays to provide continuity of psychiatric day care.

Additional commissioning work for certain departments created complex problems for staff who were working within a clearly-defined bonus scheme.

The task of simultaneous transfer of patients and equipment from an old to a new hospital proved to be a nightmare because it had not been planned down to the last detail.

Bankruptcy, fires, flooding, vandalism and bomb hoaxes put back the commissioning programme by about a year.

Insufficient thought to policies on the allocation of residential accommodation to staff resulted in rooms not being available for certain essential staff who could probably have been recruited if residence had been offered. Policy had to be altered and some staff had to be persuaded to look for accommodation elsewhere.

It had been assumed during planning that the sterile supply department would only provide a local service, whereas it subsequently became evident that a wider service was needed.

Colour selection by the design consultant should have been left until later. The original design could not be adopted because recommended fabrics and colours were no longer available from manufacturers.

The lead content in water supply was far too high, due to a combination of poor plumbing installation and the softness of the water.

The failure to predict accurately the rate of growth of workload resulted in staff being unable to cope. Problems of morale immediately set in.

The load bearing capacity of an upper floor was insufficient for the weight of x-ray films due to be stored there.

Too many departments during the important weeks immediately after handover needed domestic and portering help at the same time.

Serious operational problems became evident at too late a stage, arising from the division of a new and an old hospital providing a joint service from two different sites.

Many staff were unprepared for the major upheavals affecting their daily work which suddenly confronted them.

Not enough time had been allowed to plan the organisational structure of a department in time for the advertising campaign and for the preparation of job descriptions required by applicants.

It took almost a year to get approval for certain medical staff appointments. Manpower planning constraints caused disruption to the planned growth of new services.

Insufficient funds were available to open all the wards, despite earlier efforts to predict running costs.

A community health council, due to pressure from a local organisation, changed its mind and withheld agreement to a service being transferred from an old to a new building.

Mechanical ventilation, not properly working at handover, took a long time before it was put right.

The first choice of x-ray equipment could not be purchased because it would not fit into the design of the radiographic room.

Where industrial relations were not ideal the new hospital provided a lever to seek concessions in exchange for cooperation to transfer. The uncertainty of this cooperation materialising required contingency planning.

The need to recruit temporary labour did not coincide with the time of year when sufficient numbers of temporary staff are usually available.

The lack of satisfactory working conditions, due to difficulties in balancing ventilation and heating systems, led to staff refusing to cooperate to open a department according to the planned date.

During evening visits for the public some departments were plunged into total darkness because time switches cut off electrical supply haphazardly.

Appendix G Commissioning small projects

guidance on the completion of room data sheets and DHSS recommendations on heating services

The first page of each room data sheet should be completed by the administrator acting as project secretary and discussed and approved by the project team *before* the architect begins drawing sketch plans.

Code/Serial No

Enter a letter code for the scheme followed by the serial number of the sheet. Repeat this on the sheet for engineering services. Complete each section as follows.

1 Use of space Full description of activities: try to think of everything which the architect and engineer need to know. Do not assume that they will have background knowledge of health buildings.

2 a *Population*
Normal and maximum numbers using space
Categories (staff, patients)
Sex

b *Times of use*
Continuous
Daytime only
Constant or intermittent use

3 Functional relationships Description of functional relationship to other rooms in the department: if the preparation of sketch drawings cannot be avoided before room sheets are drafted, a note of functional relationships should be included in the schedule of accommodation. Indicate priority, for example

Should be near .....

Must be near .....

Adjacent to .....

Communicating door to .....

4 Design requirements Describe essential features, for example

a *Doors*

Type	1 leaf 1½ leaf 2 leaves open to circulation
Fixing	direction of opening self-closing lockable indicator bolt with outside release door furniture: kick plates
Glazing	observation panel fully glazed privacy control

b *Windows*
opening or fixed
obscure or clear glazing
solar control

c *Floor finish*
PVC tiles
welded PVC sheet
fitted carpet

d *Wall finish*
frequency of washing down
tiles
paintwork
decorative

e *Sound insulation*
degree of insulation or sound-proofing

f *Other*
ceiling finish
colour requirements (for clinical reasons)
minimum dimensions (for example, for eye-testing)

5 Special considerations and hazards Examples (which should be amplified) are

a *Special considerations*
security
black out/dim out
heavy equipment affecting floor loading
overhead lifting facilities
waste disposal: blood, acids, radioactive material, azides, plaster

b *Hazards*
explosion and fire
radiation
noise and vibration
gases and chemicals
dust and heat sources
infection

BRENT AND HARROW
AREA HEALTH AUTHORITY

ROOM DATA SHEET

District _____

Scheme Room	Date	Code/Serial No

1 Use of space

2 Population and times of use

3 Functional relationships to other rooms

4 Design requirements

Doors

Windows

Floor finish

Wall finish

Sound insulation

Others

5 Special considerations and hazards

ROOM DATA SHEET Code/Serial No _____	Quantity	Contract Group
6 Fixed and built-in furniture, equipment and sanitary fittings (Items requiring electrical or mechanical services should also be mentioned in section 11 or 12. Group 1 mechanical and electrical fittings should be listed in section 11 or 12 only.)		
7 Loose equipment and furniture having a significant effect on space, structural or engineering requirements (all Group 3)		All Group 3 items

6 Fixed and built-in fittings Some common items are

a *Sanitary fittings*

lavatory basin	standard
	surgeons'
	hand rinse
	vanitory unit
sink	stainless steel/porcelain
	with or without drainer
	laboratory
	scrub-up
	incorporated in worktop
taps	wrist, elbow or foot action
	standard
	laboratory
	common outlet
	shower attachment, fixed or hand-held
bath	domestic
	assisted
	Medic bath
shower	domestic
	assisted
WC	standard or special size
	semi or fully assisted
	closomat
	urinal
	bidet
	towel dispenser
	soap tray or dispenser
	mirror
	nailbrush dispenser
	shelf
	towel rail
	paper sack holder
	toilet roll holder

b *Built-in fittings and furniture*

bench tops	
cupboards	under or over bench
	full height
	medicine
	fume
	drawers or shelves
	lockable doors

curtain track (window)
curtain track (cubicle)
window blinds
clothes hooks
wall writing surfaces, notice boards
shelving

c *Group 2 items*
DDA cupboard
urine test cabinet
towel and soap dispensers
refrigerators
test types
wall-mounted sphygmo
clocks (battery type)
x-ray viewing boxes
fire extinguishers

Note: Group 2 items requiring electrical or mechanical services should be repeated in section 12.

7 Loose equipment and furniture having a significant effect on space, structure or engineering requirements All the equipment listed in this section is Group 3 by definition. The following are the main categories (give dimensions whenever possible).

a *Furniture* All items which need to be placed in a room layout drawing, such as tables, desks, chairs, cupboards, bookshelves.

b *Equipment* Trolleys, beds, lifting apparatus, weighing apparatus, sack holders, bed-side lockers.

c *Equipment requiring electrical sockets* Mobile x-ray, ECG machines, suction apparatus, heated trolleys, portable x-ray viewing boxes, dictating machines. *Note:* Loose equipment in this category need not be repeated in Section 12, but adequate socket outlets must be listed in that section.

d *Equipment associated with other services* Pipeline suction units, flowmeter assemblies, air-driven apparatus.

Engineering services

This section of the room sheet should be completed in draft by the project secretary as far as possible and then discussed by him with the DWO or the district building and engineering officers before typing and distributing to the project team.

8 Heating

a *Room temperature* Consult Building Note or other standard guidance. (DHSS recommendations, see page 95.)

b *Heating method* Normally radiators or convectors. Indicate if summer heating is required.

c *Surface temperature* Low temperature required in areas used by children, mentally handicapped, mentally ill and elderly patients.

9 Ventilation

a *Natural* Applies to most rooms.

b *Natural with mechanical extract* May be needed in kitchens, dirty utilities, WCs.

c *Mechanical supply and extract* Internal rooms with people working. Humidity control and/or air-cooling are provided only where specified in Building Notes, for example, for operating theatres.

10 Services 'Others' includes compressed air, suction and medical gases.

11 Mechanical fittings and fixed equipment The main items under this heading are the heating and ventilation equipment. Other possible items are kitchen apparatus, bed-pan washer/sterilisers. Note that extractor fans fitted in windows are electrical items (section 12).

12 Electrical fittings and equipment

a *Lighting*
fluorescent (indicate colour-correction)

ENGINEERING SERVICES

ROOM DATA SHEET

Code/Serial No _____

8 Heating

Room temperature _____ °C

Heating method

Surface temperature Normal/low

9 Ventilation

☐ Natural

☐ Natural with mechanical extract

☐ Mechanical supply and extract

Air changes per hour _____
Temperature change _____
Relative humidity _____

10 Services

☐ LPHW

☐ Domestic hot water (temperature: normal/low)

☐ Domestic cold water

☐ Drinking water

☐ Electricity

☐ Natural gas

☐ Others (specify)

11 Mechanical fittings and fixed equipment

12 Electrical fittings and fixed equipment

tungsten
reading (bed-head)
examination
operating
night-lighting
film safe-light

b *Socket outlets*
single or twin 13 amp
mobile x-ray
telephone trolley
TV and VHF aerials

c *Telephones* Conduits only. Equipment is ordered later direct from British Telecom who supply and instal.

d *Call systems*
patients call
staff emergency call
bed-head units
intercom system

e *Fire alarm system*

f *Summer heating appliances*

g *Clocks*

h *Window fans*

i *Supply to*
refrigerators
DDA cupboard
x-ray viewers
ventilation equipment and any other items in section 11
any other items from section 6

j *Emergency circuit* Indicate which of the items listed above need to be on the standby generator and which on battery supply.

Classification of equipment

Group 1 Items (including engineering terminal outlets) supplied and fixed within the terms of the building contract.

Group 2 Items which have space and/or building construction and/or engineering service requirements and are fixed within the terms of the building contract but supplied under arrangements separate from the building contract (that is, purchased by the health authority and fixed in position by the contractor before handover).

Group 3 As Group 2 but supplied and fixed (or placed in position) under arrangements separate from the building contract (that is, purchased and put in place by the health authority, usually after handover).

Group 4 Items supplied under arrangements separate from the building contract; possibly with storage implications but otherwise having no effect on space, building construction or engineering service requirements (that is, purchased by the health authority and put in place after handover).

DHSS Recommendations

Heating services — recommended environmental air temperatures (degrees C)

Typical areas

Bathrooms/showers	21
Cleaners	16
Clean utility	18
Cloakrooms	16
Conference rooms	18
Consulting/examination	21
Corridors	16
Dark rooms	18
Day rooms	18
Dining areas	18
Dirty utility	16
Disposal room	16
Entrance	16
Equipment stores	10
Flower bay	16
Interview room	18
Laboratories	18
Lecture room/classrooms	18
Library	18
Linen stores	16
Milk kitchen/demonstration	18
Nurseries	21
Offices	18
Overnight stay (visitors)	18
Patients' changing	21
Patients' lavoratories	16
Porters' base	18
Reception	18
Seminar	18
Staff base	18
Staff changing	18
Staff lavatories	16
Staff rooms and associated corridors	18
Staircases	16
Telephone exchange	18
Test rooms	16
Therapy rooms for physiotherapy	21
Treatment rooms	21
Visitors' rooms	18
Waiting areas	18
Ward pantry	16
Wards and rooms for up patients	18
Wheelchair/trolley bay	16
Working corridors	18
Workshops (heavy) } for patients'	16
Workshops (light) } use	18

Specific departmental areas

ACCIDENT AND EMERGENCY	
Cleansing	21
Examination	21
Appliance fitting	18
Plaster	18
Radiodiagnostic	21
Resuscitation	21
X-ray viewing	18

DENTAL

Dental Surgery	18
Orthodontic model and record store	16

GERIATRIC WARD/DAY HOSPITALS

Day rooms	21
Wards	21

INTENSIVE THERAPY UNIT

Multi-bed area	21
Single-bed area	16–27

KITCHENS

Cooking area	16
Day store	13
Diet store	13
Main store	16
Servery	16
Vegetable preparation/pan wash	16

MATERNITY

Abnormal delivery	21
Barrier nursing unit	18
Cot/incubator wards	24
Flying squad store	16
Normal delivery/first stage	21
SCBU nurseries and treatment room	21–30

MORTUARY

Band saw	16
Bier room	13
Body store	13
Medical observation	18
Postmortem room	16
Undertaker's room	16
Viewing room	16

OPERATING

Endoscopy and plaster rooms	21
Operating suites	18–24
Other ancillary rooms	18

PATHOLOGY

Examination	20
Patients' preparation areas	18
Sterilising rooms	16
Venepuncture	18

PHARMACY

Autoclave area/wash-up	16
Cool store	15
Dispensing area	18
Flammable store	13
Goods receiving store	18
Preparation/aseptic room	18

PSYCHIATRY

Ante-room	18
Bedrooms	18
Behaviour therapy	18
Consulting and interview	18
Day rooms and dining area	18
ECT treatment	18
Entrance	18
Industrial work	16
Therapy (dressmaking, music, group therapy)	18

REHABILITATION

Exercise area	21
Gymnasium	21
Hydrotherapy pool	26
Hydrotherapy treatment	21
Utility	21
Pool changing/showers	26
Preparation bay	21
Wax and splint	21

STAFF ACCOMMODATION

Bathrooms	18
Bedrooms	18
Bed-sitting rooms	18
Boxroom and cleaners	13
Cloakroom	16
Common room	18
Living rooms and sitting rooms	18
Sick bay	18
Utility	16

WORKS DEPARTMENT

Garages	7
Lavatories	15
Workshops	15

X-RAY

Equipment store	16
Diagnostic	21
Lavage	21
Viewing and sorting	18

Appendix H Checklists of operational systems

The main checklist, below, applies to large hospitals. A checklist for community clinics begins on page 105.

The lists are not comprehensive, but they should go a long way towards identifying subjects that must be discussed and ultimately be incorporated into the operational systems manuals. A subject likely to have a significant effect on staffing policies is marked **S**. One affecting equipment specifications is marked **E**. Those with implications for designing forms or other documents are marked **D**. Apart from alerting commissioning teams to questions of that kind, the list is also likely to draw attention to financial consequences not anticipated, or matters of policy requiring referral to the district management team or the medical staff committee.

A uniform format for producing systems manuals is recommended. To avoid duplicating headings that apply to each department, the following subjects can be regarded as common to most.

- Definition of services to be provided
- Normal hours of work
- On-call and emergency services
- Predicted workload for each section of the department
- Organisational structure
- Staffing structure
- Relationships with other departments
- Departmental records systems

Occasionally some of these are repeated. If so, it is probable there is some point to it; for example, it may be to draw attention to an important feature of organisation that is sometimes overlooked, or is controversial and requires clarifying before the hospital opens. The departments are set out in the same sequence as shown in Appendix I (page 106), grouped in a systematic way, but the subjects themselves are haphazard. It is up to each commissioning team to examine each departmental list, identify other subjects and determine a sequence for these to be considered, perhaps giving priority to those with implications on staffing, revenue funding, equipment specification and design of documents.

CHECKLIST FOR A LARGE PROJECT

Clinical departments

Use of beds, clinics and operating theatres for each specialty

Admission policies: on-take systems for medical and surgical specialities

Sessional timetables for each consultant: ward rounds, outpatient clinics, theatre sessions and administration

Catchment areas

Specialist services: referral to other hospitals

Junior medical staffing structure for each specialty **S**

On-call rotas for each specialty **S**

Research policy, ethical procedures, constitution of ethical committee

Secretarial service **S**

Environmental departments

E1 *Accident department*

- Medical organisation including managerial accountability **S**
- Major accident procedures **E**
- Admission procedures: within the hospital or transfer elsewhere
- Observation overnight **S**
- Patients brought in dead
- Use of A and E theatres **S**
- Resuscitation facilities **E**
- Treatment policies for various types of case **E**
- Treatment of minor injuries
- Safety of staff: security for violent patients; liaison with the police
- Non-accidental injury to children
- Services provided from other departments: radiology, ECG, social services and portering **S**
- Reception, clerical and records procedures **S** and **D**
- Ambulance delivery arrangements and parking vehicles
- Refreshments: vending machines **E**
- Patients' property **D**

E2 *Day care*

- Clinical admission policies: paediatrics, medical and surgical cases
- Admission and discharge arrangements
- Liaison with community services **S**
- Use of theatres **S** and **E**
- Weekly timetable and workload for the unit **S**
- Medical records procedures **D**
- Special facilities for children **E**
- Secretarial and clerical service **S**

E3 *General wards*

- Definition of use: bed allocation **S** and **E**
- The patients' day: timetable of main events and principal nursing procedures
- Private patients: admission policies and facilities
- Patients' meals service system **E**
- Drug procedures **D**

Respective duties of the ward teams, including domestic and clerical procedures **S**
Patients' belongings and valuables – procedures and storage **D** and **E**
Requisitioning, storage and issue of ward supplies **D**
Isolation policies and nursing procedures **E**
Design of the patients' brochure **D**
Waste disposal **E**
Linenry issues and storage
CSSD issues and storage
Rules about smoking
Overnight stay for relatives **E**
Patient-nurse call system
Ward forms: medical certificates, consent forms and all others **D**
Accidents to patients and visitors: reporting systems **D**
Patients dying in hospital: viewing arrangements for relatives; escorting relatives to the viewing chapel; notification procedures
TV and radio and other amenities for patients **E**
Visiting times for each ward
Refreshments and meals for visitors: authorisation of free meals **D**
Enquiries about patients' condition

E4 *Intensive therapy unit*

Clinical policies for the unit: admissions policies and clinical accountability **S** and **E**
Management of the unit: accountability
Visiting arrangements
Services from other departments such as cardiology, radiology and physiotherapy **S**
Specialised equipment: functions, procedures and maintenance **E**

E5 *Maternity department*

Catchment area
Relationship to paediatric department (special care baby unit)
Services from other departments: for example, radiology, pathology, social services **S**
Medical records systems and staffing requirements **D** and **S**
Visiting arrangements: facilities for fathers **E**
Registration of births
The patients' day (and the babies' day): ward routine
Admissions: policy on short-stay and home confinements
Parentcraft **E** and **S**
Blood bank supply
Reception arrangements **S**
Delivery suite organisation and procedures **S** and **E**
Antenatal clinic organisation **S** and **E**
Theatre suite and recovery **E**
GP obstetric care policy
Relationship between hospital and community midwifery services
Flying squad arrangements **E**
Secretarial and clerical service **S**

E6 *Operating theatres*

Definition of functions and sessional timetable **S** and **E**
Organisation and accountability
Clean and dirty zones: definitions
Liaison with theatre sterile supply: organisation and accountability
Radiology services **E** and **S**
Laboratory back-up service: frozen sections **S**
Transfer control arrangements: portering services **S**
Safety of the patient: code of procedure to prevent wrong operations being carried out **D**
Recovery ward organisation and procedures **S**
Refreshments for theatre staff **E** and **S**
Linenry services, including protective clothing **E**
Cleaning procedures, including washing down **S**
Waste disposal **E** and **S**
Telephone and intercommunicating services **E**
Anaesthetics: accountability for service and equipment
Preparation of lists: systems and documentation **D**
Swabs, needles and instrument checking procedures
Anaesthetic machines checking procedures
Changing room procedures
Secretarial service **S**

E7 *Outpatients' department*

Definition of functions: timetable **S** and **E**
Organisation and accountability **S**
Appointment patterns for individual clinics
Appointment letters: design **D**
Refreshments for outpatients **E** and **S**
Preparation of clinics: medical records procedures **S**
Reception and waiting facilities **S** and **E**
Ambulance liaison and booking procedures **S** and **D**
Systems for patients referred for radiology, pathology and pharmacy
Private outpatients: method of collecting hospital charges **D**
Medical correspondence: dictating and secretarial service **E** and **S**
Patients' appliances **S**
Policy on decentralisation (will any patients be seen elsewhere, for example, antenatal and psychiatric clinics, in consultants' offices or departments such as cardiology?)
Definition of functions in clinics such as ENT, ophthalmology, dermatology, paediatrics and dentistry **E** and **S**
Relationship with day care unit

E8 *Paediatric department*

Relationship with community child health services
Organisation and functions of the special care baby unit **S** and **E**
Toys **E**
Schooling **S**
Isolation of children: clinical policies
Facilities for parents to stay overnight **E**

Day care for children
Use of remedial professions **S**

E9 *Psychiatric department*

Functions of the department to be defined **S** and **E**
Catchment area defined: admission policies
Clinical policies: day care and inpatients
Community psychiatric services **S**
Mental health review panels
Visiting hours
Security rooms **E**
Liaison with accident department
Section procedures, including bring forward systems **D**
Custody of patients' property **E**
Services provided by other departments such as social services and occupational therapy **S**
Catering services **E** and **S**
Control and safe custody of drugs
Secretarial and clerical service **S**

Medical service departments

MS1 *Cardiology*

Functions to be defined **S**
Investigational facilities **E** and **S**
Records and data-processing **D**
Resuscitation: hospital policy and procedures **E**
Crash call: communications procedures and composition of crash-call team **S**
Specialised equipment: requirements and location **E**
Managerial accountability within the hospital
Secretarial and clerical service **S**

MS2 *Chaplaincy*

Arrangements for each denomination: routine visits and on-call services **S**
Administration of sacraments
Use of the chapel: times of services
Distribution of bibles: policy
Relaying services to the wards: epilogue broadcasts
Patients' information system for chaplains **D**
Chapel dedication service
Identifying patients wanting to use the chapel

MS3 *Chiropody*

Managerial accountability within the hospital
Referral system
Staff chiropody requirements and system **S**
Ward chiropody requirements **S**
Relationship with community chiropody service
Outpatients' chiropody requirements **S**
Definition of functions with special reference to orthopaedic clinics
Patients' records **D**

MS4 *Dietetics*

Definition of services to be provided: inpatients and outpatients **S**
Relationship with catering department
The work of the diet bay **E** and **S**
Systems for ordering and providing therapeutic diets **D**
Diets for minority and ethnic groups
Direct access services for general practitioners **S**
Provision of diet sheets **D**
Research projects: dietetic requirements
Professional role of the dietitian in relation to medical staff
Special requirements to be assessed for departments such as maternity, geriatrics, psychiatry, renal and paediatrics **S**
Teaching commitments for other professions **S**
Training of dietetic students
Secretarial and clerical service **S**

MS5 *Nursing*

Management structure **S**
Organisation of nurse-managed departments **S**
Nursing policies
Nursing procedures
Deployment of nursing staff: ratio of qualified to unqualified staff **S**
Nurse education: policy, staffing, courses and organisation **S** and **E**
Organisation of inservice training **S**
Allocation of nurses to non-recurring departments such as radiology and staff health **S**
Secretarial service **S**

MS6 *Occupational therapy*

Definition of services: use of crafts and other skills such as printing **E** and **S**
Sale of goods: records of materials bought and sold **D**
Resettlement of patients in employment
Workshops: role and use of major items of equipment **E** and **S**
Outdoor activities **E**
Loan of equipment to patients discharged home
Domiciliary services: home assessment and follow-up **S**
Life-enrichment activities for long-stay patients: use of voluntary support **E** and **S**
Patients' records **D**
Relationships with other services, such as portering
Managerial accountability within the hospital **S**
Training of OT students
Secretarial service **S**

MS7 *Pathology*

Specimen collection and reception: inpatients and outpatients **S** and **E**
Use of phlebotomists **S**
Laboratory request procedures **D**
Reporting systems: routine and emergency **D**
Safety procedures
On-call services **S**
Training junior medical laboratory scientific officers – obtaining approval from the Council

for Professions Supplementary to Medicine
Quality control policies
Samples from general practice: policy **S**
managerial accountability
isotopes: storage and handling
waste disposal including radio-active and contaminated material
frozen sections from theatre
data processing **D** and **E**
blood bank and transfusion service: collection, storage, checking and emergency procedures **E**
Separate departmental policies and systems for each of the main laboratories **E** and **S**
Mortuary procedures: releasing bodies to undertakers **D**
Control of infection
accountability: responsibility of the microbiologist
function of control of infection committee
isolation procedures **E**
disinfectant policy
staffing requirements and systems **S**
Investigations referred to other centres **S**
Biochemistry functions **S**
Central working up arrangements for glassware **S**
Servicing apparatus – accountability and policy **S**
Secretarial and clerical services **S**

MS8 *Pharmacy*

Antibiotic policy: booklet **D**
Sterile fluids: manufactured or purchased? **S** and **E**
Ward pharmacy service: supply, storage and administration **E** and **S**
Outpatients' prescriptions: systems including payment of charges
Quality control **S**
Drug information system **S**
Purchasing and stock control systems **D**
Deliveries and storage **E**
Controlled and scheduled drugs procedure
Take-home prescriptions
Intravenous additives: systems
Out-of-hours service
Drug house representatives: policy
Clinical drug trials: ethical committee procedures
Inflammable stores: security and fire prevention
Transport of drugs within the hospital **E** and **S**
Prescription forms **D**
Secretarial and clerical service **S**

MS9 *Physiotherapy*

Definition of functional and special apparatus required **E** and **S**
Managerial accountability within the hospital
Availability of services: wards, outpatients and ITU **S**
Appointments system and reception **S** and **D**
Portering requirements **S**
Use of gymnasium for staff recreation: policy and systems
Patients' records **D**
On-call arrangements **S**
Hydrotherapy pool: functions **E** and **S**
Domiciliary services **S**
Training of students
Secretarial service **S**

MS10 *Radiology*

Functions of the department; use of each room **E** and **S**
Mobile equipment **E** and **S**
Relationship with medical records department
Use, storage and retrieval of small film formats **E** and **S**
Records system: filing and retention of x-ray films and other imaging, and patients' records **E, S** and **D**
On call services **S**
Major accident procedures
Managerial accountability within the hospital
Safety of staff: radiation protection procedures; health and safety procedures; isotopes' storage handling **D**
Maintenance of equipment: accountability; frequency; emergency repair procedures
Image quality control: procedures **S**
Organisation of film processing **E** and **S**
Procedures for identifying patients **E**
Request procedures
Appointment systems for individual imaging modalities and examinations **S** and **D**
Linenry services **E**
Domestic services **S**
Portering requirements: transport of patients from wards and departments **S**
Requisitioning storage and delivery of stores and supplies **E**
Waste disposal: silver recovery
Intercommunication **E**
Film-reporting systems **E** and **S**
Clinical access to departments: conference **E**
Services for accident department; ITU; operating theatres; wards; maternity **S**
GP direct access: policy and procedures **S** and **D**
Nursing support services to be defined **S**
Junior medical staffing requirements **S**
Training students: inservice training
Fire and security
Statistics procedures
Secretarial and clerical service **S**

MS11 *Social services*

Definition of functions
Accommodation to be provided
At-risk register: accountability and upkeep
Clarification of role in respect of patients' financial affairs **S**
Secretarial and clerical service **S**

MS12 *Speech therapy*

Definition of functions: children, adults, geriatrics **S**

Managerial accountability within the hospital
Patients' records **D**
Integration of hospital and community services
Use of specialised equipment **E**
Training of students

Support service departments

SS1 *Ambulance services*

Policy and procedures
Parking arrangements
Facilities for ambulance staff **E**
Supplementary services: hospital car service and volunteer car service

SS2 *Catering services*

Inpatients' meals service: routine and emergency, special diets **E** and **S**
Kitchen organisation
Special functions and hospitality: policy **E**
Staff meals service policy and systems: main dining room; night meals payment; policy and collection of cash; decentralised services; tea bars and vending machines; staff beverages **E** and **S**
Meals for patients in isolation wards **E**
Theatre staff refreshments **E** and **S**
Food storage
Centralised washing up **E**
Meals for visitors and relatives
Relationship with dietetic department
Services provided from ward kitchens: provisions issues
Purchasing policies: contracts; delivery and storage; refrigeration
Relationship with domestic and portering services: requirements and accountability **S**
Secretarial and clerical service **S**

SS3 *Domestic services*

Cleaning policies for different surfaces: methods, equipment and materials **E**
High-level cleaning
Window cleaning: frequency, exclusions, checking procedures **S**
Special requirements in theatres, delivery suite and isolation rooms **S**
Routines for cleaning public areas
Cleaning schedules for each ward and department **S**
Issue of cleaning materials
Use of contract services or direct labour for special tasks **S**
Accountability in departments such as residences, catering and theatres
Supervisory control **S**
Secretarial services **S**

SS4 *Library and shop services*

Patients' library **S**
Medical library **S**
General (staff) library **S**
Nurse training school library **S**
Bench books: policy
Journals: specification and policy
Hairdressing services for staff **E**
Hairdressing and barber services for patients: facial and surgical shaving **S**
Bank and post office facilities
Newspaper services
Other shopping services, including trolley services **E**

SS5 *Linen services*

Staff uniform: specification and amount of issue for each category of staff; personal issue or pool system? **E**
Issue and return procedures: wards, theatres, residences and other departments **E** and **S**
Uniform exchange procedures: laundry and repairs; autovalet systems **E** and **S**
Protective clothing: specification and amount of issue **E**
White coat service **E** and **S**
Ward linenry services system **E** and **S**
Theatre linenry and protective clothing: specification and system of issue **E**
Personal laundry service **E** and **S**
Marking systems **E**
Curtain changing systems **S**
Sewing room work functions defined **E** and **S**
Personalised clothing for certain patients: specification and system of issue **E**
Precautions for transporting and laundering infected linen **E**

SS6 *Medical records including data processing*

Registration systems **D**
Retention of records: policy
Forms for each department using medical records **D**
Computing and data-processing policies **S**
Micro-filming **S** and **E**
Confidentiality and security of records
Information to GPs: systems including notification of deaths and discharges **D**
Admission procedures **S**
Use of ward clerks: definition of role and accountability **S**
Collection of information on patients: systems throughout the hospital, including HAA **D**
Presentation of information on patients: requirements and systems
Outpatients' appointments system **E** and **D**
Bed-state system **D**
Relationships with x-ray department and pathology
Long-term storage
Filing system **E**
Design of case folder **D**

SS7 *Portering department, including transport*

Postal arrangements: internal and external; franking machines; incoming telegrams; redirecting mail **E**
Regular delivery and collection service **S**
Definition of centralised and departmental services **S**
Collection of waste: separation and collection; disposal of 'sharps' and infected material **E** and **S**
Wheelchairs: location and maintenance **E**
Delivery of flowers
Hospital vehicles: functions **E** and **S**
Role of porters for duties relating to patients' meals, stores, pharmacy, theatres, admissions, linenry, the mortuary, x-ray, rehabilitation **S**
Supervisory control and shift system **S**
Secretarial service **S**

SS8 *Secretarial services*

Definition of centralised and decentralised functions **E** and **S**
Accountability for selection and supervision of secretaries and arranging cover for absences
Equipment requirements: policy on special typewriters **E**
Word-processing: use of centralised facility **E** and **S**
Maintenance of typewriters
Audio-dictating systems **E** and **S**
Design of headed notepaper **D**

SS9 *Security including fire prevention, car parking and routes*

Organisation: definition of functions and equipment requirements **E** and **S**
Security patrols: functions and frequency **S**
Staff identity cards: system **E** and **D**
Lost property
Security communication systems **E**
Control of entrances: locking up at night
Relationship with police
Locks and keys – policy, systems and control **E**
Fire alarm systems and check
Security of inflammable goods
Security of cash in transit and at the time wages are paid out
Fire: evacuation procedures; training and fire drills
Fire-fighting equipment: special requirements to deal with flammable or electrical risks **E**
Emergency lighting
Policy on smoking
Access to the site for fire tenders
Notices: no smoking, fire escape procedures; use of equipment **D**
Car parking policies for patients, visitors and staff: special provision for the disabled, ambulances and taxis **S**
Traffic routes: private cards, suppliers, lorries, buses, ambulances and pedestrians
Parking of bicycles, motor bicycles and mopeds
Secretarial service **S**

SS10 *Sterile supply services*

Theatre sterile supply policy: type of service and system of issue **E** and **S**
Theatre sterile supply: cleaning, packing and storage systems **E**
Decontamination of major equipment, such as ITU and ventilators **E** and **S**
CSSD service policy: type of service and delivery system **E** and **S**
Standardisation (vide the Cunliffe report)
Catalogue of packs to be used **E**
Issue and control of prepacked single items of equipment **E**
Delivery and control of specialised equipment processed through the CSSD – issue and return procedures
Sterilisation: alternative methods for heat labile equipment
Use of autoclaves (implementation of HTM (10) 1981)
Services to specialist departments such as dentistry, the accident department, cardiology, radiology **E** and **S**
Supplies for community services **E** and **S**
Staff training methods
Secretarial services **S**

SS11 *Telephone services*

Quick reference systems in the switchboard **E**
Staff location systems
Crash-call communication system
Pay phones
Ward telephone trolley services **E**
Policy on private calls: collection of charges
Entries in directories and yearbooks
Telex and telegrams
Use of long-range bleeps **E**
Office intercommunication systems **E**
Telephone directory: allocation of extensions: design of directory and updating **D**
Distribution of Post Office directories

SS12 *Voluntary services*

Formation of League of Friends
Use of volunteers: honorary contracts (format) **D**
Range of services to be specified: help for library services, shops, hospital radio system, canteens, ward activities, car services **S**
Management and staffing of the department **S**
Fund raising

Specialist Departments

SP1 *Finance department*

Departmental budgetary control: policy and systems
Trust funds: policy and systems

Payment of salaries and wages: policy and systems; time clocks or signing-on registers? **D** and **S**
Accounting procedures **D**
Collection of cash **E**
Financial information systems
Gifts to hospital: policy
Standing orders: authority to incur expenditure
Losses and compensation
Internal audit
Petty cash
Payment of travelling expenses **D**
Hospitality policy, financial limits and procedures
Patients' monies and property

SP2 *Personnel department*

Definition of the department's responsibilities **S**
Recruitment brochures design **D**
Staff records: policy; procedures and design; visual display systems **D** and **E**
Joint staff consultative machinery
Staff information systems: bulletins and notice boards **E**
Employment of the disabled: policy
Staff induction and training: functions and organisation **S**
Staff selection: procedures; interview panels; accountability for appointing staff
Disciplinary procedures: appeals machinery **D**
Grievance machinery **D**
Staff handbook design **D**
Day nursery arrangements **S** and **E**
Staff social club: constitution and facilities
Staff amenities **E**
Name badges (or security cards) – specification and policy about these being worn **D** and **E**
Facilities for trade unions **E**
Rest rooms and common rooms **E**
Changing accommodation: allocation of lockers **E**
Accountability for changing accommodation: issue of keys
Staff rest-breaks: policy
Accountability for the residences **S**
Staff residences: policy on allocation of rooms
Tenancy agreements
Residences: house rules (for example, use of electrical appliances)
Security of resident staff
Guests staying overnight
Visitors to residents: rules
Allocation of garages
Relationships with domestic services
Resident staff representative machinery

SP3 *School of nursing*

Definition of educational standards for entry
Definition of functions, post registration and inservice training **S**
Library services **S** and **E**
Arrangements for examinations
Recruitment brochure **D**
Allocation of learners: systems and equipment requirements
Relationship with other departments: personnel, residences, transport, linenry
Secretarial and clerical service **S**

SP4 *Staff health service*

Definition of functions **S**
Accidents to staff: reporting systems **D**
Organisation and accountability
Immunisation policies and other precautions to protect staff
Policy for chest x-rays of new staff
Staff records and other forms **D**
Hospital safety committee: functions
First aid – decentralised systems and equipment **E**
Staff sick in residences: provision of sick bay or use of hospital beds; GP care for residents
Other staff health services: dentistry and chiropody **S**
Health and safety at work: policies and accountability

SP5 *Supplies department*

Definition of responsibilities – relationships with catering, pharmacy and works **S**
Requisitioning arrangements: non-stock and stock items, authority to sign requisitions **D**
Stock control systems: minimum and maximum stock levels **D**
Security of stores
Return empties store
Goods reception and despatch: systems
Access to stores in emergencies
Distribution of goods: internal transport system **S**
Ordering procedures: authority to incur expenditure
Condemning procedures
Liaison with works department: electrical safety checks for new equipment
Maintenance and service contracts: policy and frequency
Tender and quotation procedures
Inventory control (selective system)
Stores layout
Sale of waste products
Appliances for patients: organisation, supply and systems **S** and **E**

SP6 *Works department*

Accountability for specialised equipment such as x-ray machines (Is this the responsibility of the works department or not?) **S**
Planned maintenance system **D** and **S**
Repair requisitioning procedures: routine and emergencies **D**
Energy conservation
Repair of furniture and items such as wheelchairs **S**

Storage of materials: accountability and systems **D**
On-call services **S**
Emergency power supply checking procedures
Precautions against legionnaires disease: water plant checks
Maintenance of electromedical equipment **S**
Painting programme: direct or indirect labour? **S**
Electrical safety: procedure for checking new equipment **S**
Fire alarm checks
Upkeep of lifts **S**
Workshops: definition of functions and equipment requirements **E**
Supplementary heating policy **E**
Medical gases: test procedures, maintenance and storage
Anaesthetic equipment: test procedures
Maintenance contracts: policy, frequency of service visits
Industrial gases: storage, safety, ordering and stock control
Incineration
Upkeep of grounds
- landscaping strategy: horticultural advice **S**
- contract services or direct labour **S**
- use of grounds for recreational purposes **E**
- road cleaning and system for clearing the grounds of litter **S**
- seats for patients and visitors **E**
- equipment for grounds maintenance and its storage **E**
- watering points
- shortcuts over grassed areas, provision of paths

Secretarial service **S**

A *Administration*

Management (executive) structure of the hospital: accountability and relationships defined
Legal services to the hospital
Organisation of personnel functions
Estate terrier **D**
Administrative on-call system **S**
Committee and meetings structure, including representative meetings for doctors and staff consultation
Use of conference rooms: booking system
Photocopying, duplicating, collating and wordprocessing services **E** and **S**
Central filing system **E**
Signposting policy and schedules (internal and external) **E**
Supplementary signs and notices **E**
Naming and numbering buildings, wards and departments **E**
Entrances and entrance hall: reception, control, enquiries, upkeep
Document control: headings and uniformity **D**
Lifts and hoists and chutes: functions and upkeep
Works of art including paintings: accountability
Patients' property, custody and return of valuables, pensions for long-stay patients **D**
Witnessing wills
Donation of bodies and organs for anatomical research
Patients dying in hospital: administrative responsibilities; coroners cases; burials by the health authority
Use of communal rooms: policy

CHECKLIST FOR COMMISSIONING COMMUNITY CLINICS AND HEALTH CENTRES

This list may be useful for those engaged in commissioning a community service building.

1 Definition of principal functions, staffing and equipment requirements relating to each of these

Child health services
Chiropody
Dental services
Speech therapy
Antenatal and parentcraft
Reception and switchboard
Health education
Family planning
GP services
Treatment room procedures
Clerical support
Nursing administration based at the clinic
Social work services

2 Predicted workload

Population served for preventive and child health services
Number of children (and schools) to be served
Number of elderly to be served (relevant for chiropody services)
For a health centre, patients' list for each GP
(These data will affect staffing requirements)

3 Requirements from other departments

Security
Sterile supply services **E** and **S**
Cleaning **S**
Works, maintenance and upkeep of grounds **S**
Supplies: regular issue of consumables
Pharmacy
Welfare foods
Contraceptive supplies
Linenry and laundry **E**
Dental supplies **E**
Transport services **S**
Pathology
Chiropody supplies **E**
(Some of these services may require additional staff in hospital-based departments)

4 Departmental systems

Storage and issue of drugs
Incoming post
Appointments systems **D**
Changing accommodation **E**
Refreshments for staff **E**
Sales of goods
Waste disposal **E**
Car parking
Signposting – exterior and internal **E**
Fire precautions
House committee for health centre: terms of reference and membership
Dental records and associated systems **D**
Child health records and associated systems **D**
Health centre licence
For a health centre, the full range of systems relating to general practice **E** and **S**
Appointments letters to patients, and appointment registers **D**
Facilities for children in waiting rooms **E**

Appendix I Classification of departments

(in a typical large new hospital)

The classification relates to the checklist for a large project in Appendix H, pages 97-104.

CD **CLINICAL DEPARTMENTS**

1 ANAESTHETICS
2 COMMUNICABLE DISEASES
3 DENTAL SURGERY
4 EAR, NOSE AND THROAT
5 GENERAL MEDICINE
6 GENERAL SURGERY
7 GERIATRICS
8 NEUROLOGY
9 OBSTETRICS AND GYNAECOLOGY
10 ORTHOPAEDIC SURGERY
11 PAEDIATRICS
12 PSYCHIATRY
13 REHABILITATION

E **ENVIRONMENTAL DEPARTMENTS**

1 ACCIDENT DEPARTMENT
2 DAY CARE UNIT
3 GENERAL WARDS
4 INTENSIVE THERAPY UNIT
5 MATERNITY DEPARTMENT
6 OPERATING THEATRES
7 OUTPATIENTS DEPARTMENT
8 PAEDIATRIC DEPARTMENT including SPECIAL CARE BABY UNIT
9 PSYCHIATRIC DEPARTMENT

MS **MEDICAL SERVICE DEPARTMENTS**

1 CARDIOLOGY
2 CHAPLAINCY
3 CHIROPODY
4 DIETETICS
5 NURSING
6 OCCUPATIONAL THERAPY
7 PATHOLOGY
8 PHARMACY
9 PHYSIOTHERAPY
10 RADIOLOGY
11 SOCIAL SERVICES
12 SPEECH THERAPY

SS **SUPPORT SERVICE DEPARTMENTS**

1 AMBULANCE
2 CATERING
3 DOMESTIC
4 LIBRARY AND SHOPS
5 LINENRY
6 MEDICAL RECORDS (including DATA-PROCESSING)
7 PORTERING (including TRANSPORT)
8 SECRETARIAL
9 SECURITY (including FIRE PREVENTION and CAR PARKING)
10 STERILE SUPPLY
11 TELEPHONE
12 VOLUNTARY SERVICE

S **SPECIALIST DEPARTMENTS**

1 FINANCE
2 PERSONNEL (including RESIDENCES)
3 SCHOOL OF NURSING
4 STAFF HEALTH
5 SUPPLIES
6 WORKS

A **ADMINISTRATION**

Appendix J Example of an operational systems manual

This example describing the function of the works department for the North Ayrshire District General Hospital does not conform to the design of operational systems recommended in Chapter 4, but it illustrates the value of producing such a document. It answers a wide range of questions that have to be decided long before a new hospital is opened.

NORTH AYRSHIRE DISTRICT GENERAL HOSPITAL

WORKS DEPARTMENT

1 FUNCTION

1.1 To coordinate the maintenance of property and environmental services.

1.2 To ensure that property and services comply with Statutory Instruments and Codes of Practice.

1.3 To operate a planned preventive maintenance programme.

1.4 To provide advice of a professional/technical nature to other departments as required.

1.5 To provide advice and guidance on matters relating to energy conservation and the Health and Safety at Work Act.

1.6 To prepare and implement safe systems of work and ensure that all staff within their departments are conversant with emergency procedures in the event of mechanical or electrical failures or malfunction.

2 LOCATION

The works department is adjacent to the pharmacy, goods entrance and boilerhouse complex.

3 ACCOMMODATION

The department consists of the following.

Offices for engineering staff
Offices for building staff
Planner estimator's office
Plan store
Administrative office
Fitters' workshop
Electricians' workshop
Electromedical workshop and store
Foreman's enclosure
Plumbers' workshop
Joiners' workshop
General foreman's office
Painters' workshop

Foreman painter's office
Day-to-day stores
Messroom
Domestic services room
Changing room and toilets
Electrical switch room
Paint store
Builder's material store
Pipe and timber store

4 ADMINISTRATIVE CHARGE

The senior engineer (hospital) and the senior building officer (hospital) are responsible for the day-to-day maintenance and operation of all the engineering plant, buildings, grounds, roads and services as appropriate. They liaise with other sector and unit staff as required.

5 OPERATIONAL SYSTEM

5.1 Bulk supplies

5.1.1 The lockfast area in the main bulk store is used for the storage of larger items of plant spares and bulk supplies for the works department and is under the control of the administrative assistant supplies.

5.1.2 Issues of engineering and building stores from this area, for use by the works department, are made to members of works staff on production of stores requisitions. The requisitions give the following information.

Description of material(s) to be issued
Commodity code
Quantity
Hospital and job number for which material(s) are intended
Signature of authorising officer

5.1.3 The storekeeper must obtain the signature of the employee for the materials issued.

5.2 Day-to-day stores

Requisitioning from the day-to-day stores within the works department is by a stores requisition system.

5.3 Maintenance requisitioning system

5.3.1 All repairs are dealt with by the following procedure.

A maintenance repair order (MRO) book is used for requisitioning all building and engineering repairs.

This book has triplicate copies for each requisition.

Two copies are sent to the works department.
The third copy is retained in the MRO book in the issuing department or ward.

The MROs give details of

the requisitioning department or ward or room number
the description of fault and repair requested.

5.3.2 MROs are allocated to tradesmen by 10.00 am each day. MROs received after 10.00 am are allocated the following day. (For emergencies see para 5.3.5)

5.3.3 All MROs must be signed by an authorised officer, who is the head of department/charge nurse/ward sister, or his/her authorised deputy.

5.3.4 On completion of the work, or investigation of the complaint, the top copy of the MRO is signed by the originator or authorised deputy indicating that he/she is satisfied that the order has received attention. This top copy is returned by the tradesman to the works department.

5.3.5 Emergency repairs are telephoned to the works department, and a confirmatory MRO issued as soon as possible thereafter.

5.3.6 Emergency repairs required outwith normal working hours are reported to the senior nursing officer on duty who instructs the telephonist to contact the member of the works staff on-call.

5.3.7 The senior engineer (hospital)/senior building officer (hospital) provides the telephonist with details of on-call staff.

5.3.8 When the cost of individual items of work exceeds a predetermined financial limit, the request is passed to the district engineer/building officer for authorisation and the department concerned is informed.

5.3.9 When practicable requisitions received are carried out by the works department. When contractors are required to carry out works, this is arranged by the works department.

5.3.10 In certain circumstances the superintendent radiographer reports faults in the x-ray department directly to the manufacturer, and as soon as possible thereafter advises the senior engineer (hospital).

5.4 Planned preventive maintenance (PPM)

5.4.1 Plant and equipment in all areas is shut down periodically for routine maintenance and repairs.

5.4.2 The planned preventive maintenance programme is monitored and controlled by the works department staff.

5.4.3 The maintenance programme is arranged to give adequate notice (where possible 14 days) of any withdrawal of services, or closure of areas involving decanting. Such withdrawals or closures must be discussed in advance with staff concerned.

5.4.4 Heads of departments and senior members of staff are notified of the proposed dates and times of carrying out PPM and the works staff confirm that the dates and times proposed are suitable.

5.5 Electrical plant distribution and equipment

5.5.1 The electrical distribution system is the responsibility of the engineering department.

5.5.2 Access is required to all wards and departments to provide regular maintenance on all electrical services according to the maintenance programme. These periodic inspections require power to be switched off on occasions. This is done in accordance with Paragraph 6.7.4.

5.5.3 No alterations may be made to the existing installation until the proposal has been checked by the senior engineer (hospital) and technical difficulties and costs ascertained.

5.5.4 All electrical or electromedical equipment is purchased by the engineering department.

5.5.5 All equipment coming into the hospital or residences must be given a safety check by the works department. Once checked the equipment is fitted with the correct plug and fuse. A special register is kept of all equipment which has been checked and verified as electrically safe. Only equipment on this register may be put into service.

5.5.6 High voltage switchrooms and transformer substations are out of bounds to all personnel, including the engineering department, without an access permit. This permit along with a permit to work is issued by the senior engineer (hospital). A code of practice for high voltage distribution is in operation and accords with the Factories Act 1961.

5.5.7 No persons, except those authorised, are allowed to carry out work on any electrical equipment, plant or distribution system. A safety code of practice is adhered to strictly.

5.5.8 The fire alarm system is tested weekly at an agreed time. The alarm is silenced after a predetermined interval. Prolonged sounding of the alarm indicates a fire. Each red telephone is checked at the same time and any fault discovered reported immediately to the Post Office.

5.6 Electrical safety in staff residences

5.6.1 The works department is not responsible for carrying out repairs to equipment which is the personal property of members of staff.

5.6.2 Equipment belonging to staff is inspected by the engineering department before being used in the residences.

5.6.3 Staff have to make their own arrangements for repairs to faulty personal equipment and must have it checked again by the works department before being used.

5.6.4 Where rooms are centrally heated, the use of other forms of supplementary heating is forbidden, except in separately metered staff accommodation (scale E and F). In the event of an emergency, alternative forms of heating are provided, if available.

5.6.5 The use of infrared grills, cookers, toasters, and so on, outside the residence kitchen is forbidden, except in separately metered staff accommodation (scale E and F). Subject to conditions in paragraph 5.5.5.

5.7 Medical gases

5.7.1 The piped gas system is tested as per Hospital Technical Memorandum No 22.

5.7.2 The senior engineer (hospital) is responsible for the maintenance and reliability of all items of fixed plant and piped services up to and including the terminal unit.

5.7.3 No modification or alteration to the piped gases system can be made without the permission of the senior engineer (hospital).

5.7.4 A system of authorisation and permit to work is operated by the senior engineer (hospital). All repairs, inspections, tests and modifications are entered in the register kept by him.

5.7.5 The authorised person in charge of inspection and repair work is responsible for

a identifying any maintenance work which requires routine testing and notifying details to the senior engineer (hospital),

b giving written notice to the senior engineer (hospital) when any work requiring an acceptance test procedure is identified, and obtaining a permit to work from the senior engineer (hospital) before carrying out such work,

c rendering a certificate to the senior engineer (hospital) when no acceptance test is required after work is carried out.

5.7.6 The senior engineer (hospital) maintains a system of planned preventive maintenance using works department staff.

5.7.7 All members of staff are required to report immediately to the senior engineer (hospital) any difficulty or malfunction in any part of the permanent fixed system, ceiling drops, wall booms, pedestal or wall mounted outlets and associated equipment, by means of the maintenance repair order system, or emergency procedures as detailed in 5.3.5 and 5.3.6.

5.7.8 Anaesthetic machines and related equipment undergo regular inspection and maintenance.

5.7.9 The replacement of outlet valves and terminal units at hose connections and flow meters does not constitute an alteration requiring an acceptance test procedure, but the replacement or installation of new outlet valves or terminal units at hose connections of flow meters must be tested.

5.7.10 All hand operated valves are protected from casual interference by a 'break-glass' cover. No unauthorised person is allowed to turn off any medical gases or vacuum at these points.

5.7.11 Medical pipeline vacuum units (suction jars) are used as recommended in BS4957 paragraph 3. These have an interceptor with automatic cut-out to prevent fluids and solids entering the pipeline.

5.7.12 Alarm indicator panels are located at the boilerhouse and telephone exchange with slave indicator panels at the theatre nursing officer's office, intensive therapy unit, nurses' station and porters' station (main entrance).

5.8 Maintenance contracts

5.8.1 The procedure is that the service engineer reports to the engineering department and then is accompanied by a tradesman to the particular piece of equipment or plant to be serviced.

5.8.2 At the discretion of the senior engineer (hospital), a member of the works staff remains with the service engineer throughout the service. Once the equipment is serviced the service engineer and tradesman operate it to ensure that it is safe and has been satisfactorily serviced.

5.8.3 The service engineer has the service report signed by the senior engineer (hospital) or his deputy.

5.8.4 When equipment under service contract fails between contract visits the engineering department is notified at once. A tradesman carries out repairs on the parts of the equipment which do not qualify for service under the contract; for instance, fuses and loose connections. If the equipment is still faulty the service engineer is then called out.

5.8.5 If the equipment has failed due to bad servicing, or to a fault which has occurred previously, payment of the invoice for the service engineer's visit is withheld by the senior engineer (hospital) pending investigation.

5.8.6 The engineering department arranges with heads of departments times suitable to carry out servicing.

5.8.7 Maintenance contracts are negotiated by the works department on behalf of the North Ayrshire and Arran Health District.

5.9 Boilerhouse, heating and ventilation

5.9.1 The heating boilers operate on a 24-hour cycle throughout the year with one or more being switched off as required. The boilers are fully automatic and thermostatically controlled.

5.9.2 The ventilation and air-conditioning plants operate continuously, or during working hours as required.

5.9.3 The supply of heating in the hospital areas is controlled by thermostatic radiator valves.

5.9.4 The senior engineer (hospital) is responsible for maintaining the ambient temperature in all areas in the hospital complex in accordance with SHHD recommendations and the need to conserve energy. Consultation with departmental heads should take place before any alteration to the ambient temperature.

5.9.5 In the event of any interruption of service, the decision to withdraw the service is taken by the senior engineer (hospital) in consultation with senior medical, nursing and administrative staff.

5.10 Emergency power supplies

5.10.1 There are three standby generators in the hospital complex.

No 1 generator	350 KVA	services the east section
No 2 generator	350 KVA	services the boilerhouse section
No 3 generator	650 KVA	services the west section

5.10.2 Each generator is run on load for at least two hours every six weeks and for four hours once every six months. These 'on-load' tests are arranged by the senior engineer (hospital) in consultation with the heads of departments concerned.

5.10.3 No warnings can be given of breakdowns in the main SSEB power supply to the hospital.

5.11 Fabric cleaning

5.11.1 Washing down ward areas and ancillary accommodation is undertaken in accordance with the PPM programme or as required. The senior building officer (hospital) must consult and advise medical, nursing and administrative staff about dates so that decanting can be arranged where necessary (see para 5.4.3).

5.11.2 Washing down of theatres is undertaken in accordance with the PPM programme or as required. Urgent washing down due to cross infection or contamination is carried out when requested on notification from the theatre nursing officer.

5.11.3 The domestic services manager liaises with the senior building officer (hospital) as to the use of cleaning reagents.

5.12 Portable and fixed equipment

5.12.1 The works department holds a record of safe floor loadings. Heads of departments must consult the senior building officer (hospital) when any heavy item is to be brought in or moved to ensure that no area is overloaded. The senior building officer (hospital) is responsible for ensuring that no area is overloaded either by dead load or mobile load.

5.12.2 Details of proposed equipment to be put into use are provided to the senior building officer (hospital) and senior engineer (hospital) and no item must be installed or put into use without the approval of the senior building officer (hospital) and/or senior engineer (hospital). All items are selected in accordance with SHHD/DS 976/81 para 3.2.19.

5.12.3 All loose furnishings must be kept in the position intended, and must be located so as not to cause obstruction.

5.13 Fire access and escape routes

5.13.1 Signs are erected at suitable locations on roadways to identify 'NO PARKING' and 'FIRE ACCESS'.

5.13.2 Fire escape doors and ramps are clearly identified externally. Internal fire escape stairs and passageways are clearly identified.

5.13.3 All fire escape doors and smoke stop or fire check doors are clearly identified and must be maintained free to close. No wedges or catches or other means are permitted to maintain these doors in the open position.

5.14 Suspended ceilings

5.14.1 Only authorised works staff are permitted to remove any sections of the suspended ceilings.

5.14.2 Any sections removed must be re-erected at the end of the work day. Ceiling panels must be carefully handled to avoid damage or soiling.

5.14.3 Care must be taken to ensure that service indicator labels are correctly maintained on replacement of ceiling panels.

5.15 Curtain railing

Curtain railing is maintained by an approved contractor, under the direction of the building officer. Curtain railings must not be used for suspension of any items other than curtains.

5.16 Grounds and landscaping

5.16.1 The maintenance of all roads and signs is under the direction of the senior building officer (hospital).

5.16.2 Routine garden maintenance, including grass cutting, is controlled by the unit administrator (hospital). Landscaping is under the direction of the senior building officer (hospital) following consultation with the unit administrator.

5.17 Liquid gas cylinders (fuels): use and storage

5.17.1 All liquid propane gas (LPG) cylinders are ordered, stored and issued by the senior building officer (hospital)/deputy. Cylinders must be returned to the senior building officer (hospital)/deputy after use. No LPG cylinders are retained in unauthorised areas when not in use.

5.17.2 Any person or department requiring the use of an LPG cylinder must make a request to the senior building officer (hospital) who maintains a record of its location, period of use, and date of return.

5.18 Fire fighting equipment

5.18.1 The works department is responsible for checking all fire fighting equipment quarterly and rectifying any faults found.

5.18.2 The fire fighting equipment is checked annually by the works staff or an appointed outside contractor.

5.18.3 Automatic detectors are checked annually by the works staff or appointed outside contractor.

5.18.4 The fire alarm system is tested weekly by the works department at a time agreed to with all ward and departmental heads.

5.18.5 All fire fighting equipment must be retained in its proper location on brackets or plinths and must only be removed for inspection, servicing or use.

Appendix K Preparing a manpower plan

This paper gives a brief chronological account of how the manpower plan for the Telford District General Hospital was prepared. The work was undertaken over a six-month period by Jillian MacGuire, department of social development, Telford Development Corporation, working full-time, and David Sandbach, personnel department, Salop Area Health Authority, who devoted about a quarter of his time to the project.

1 Programme

We began by producing an outline programme of work, which we thought would need to be undertaken. We completed most of the tasks outlined except for discussions relating to training, which we felt would more properly be carried out once the plan had been officially adopted. The order in which the tasks were completed did not, in the event, follow the programme particularly closely. Costing and the validation of the estimates against the Capricode formula were not done until just before drafting the report, and work on the labour reserve was held up pending the provision of information from OPCS. A series of working papers was prepared during the six months. Information from these papers was fed into the preparation of the staffing plan at appropriate points.

2 Documentation

An early decision was taken to prepare the information for computer analysis. Each staff member required by the new hospital was treated as a single case. The following data items were recorded for each case.

1 DHSS payscale code
2 DHSS occupation code
3 CODOT classification
4 Functional area
5 Physical location in the new hospital
6 WMRHA occupational group
7 WMRHA job title
8 Fraction of WTE to be worked
9 Cost to AHA
10 Source of recruitment
11 Date of recruitment
12 Unique job title

It was, perhaps, unfortunate that we were doing our work at the time when a changeover from the WMRHA coding system to the DHSS coding system was taking place. It was for this reason that we coded the posts in both forms. In any case the DHSS coding scheme cannot easily be dealt with by SPSS (statistical package for the social sciences), which we had available for use at the county computer bureau.

A similar exercise was undertaken with respect to staff on the payroll in mid-1979 at the hospitals due for closure or transfer. Basic information was abstracted from the combined staff payroll statistics supplemented by information from the internal filing system. The following data items were recorded for each case.

1 Distance of home from workplace
2 Distance of home from Telford DGH site
3 Age
4 Sex
5 Functional area
6 WMRHA occupational group
7 WMRHA job title
8 Fraction of WTE worked
9 Actual hours (if available)
10 Marital status
11 Years on staff
12 Unit
13 Contract type (part-time or full-time)

It was hoped that the matching of the two groups could be done by computer, but in the end the matching was carried out by hand, though the computer was used to list cases in order of their likelihood to seek transfer to the new hospital. It was also used to provide cost estimates for various sub-groups of staff, to produce frequency counts of staff by job title and to produce a complete listing of staff required by DHSS payscale and occupation code.

3 Whole-time staff requirements

The whole-time staff requirements for nursing were worked out by the planning section on the basis of accepted formulae. Departmental heads at the Royal Shrewsbury Hospital, were asked to estimate the numbers of staff who would be required in their equivalent departments at the new hospital. Medical and dental manpower requirements were arrived at in consultation with the regional health authority.

4 Numbers of staff required

The whole-time staff requirements were adjusted to take into account the fact that considerable numbers of nursing staff and ancillary staff are likely to be part-time workers. Calculations were based on the current patterns at the Royal Shrewsbury Hospital. Patterns of part-time working, leave entitlements and hours could well change by 1986 and the total numbers of staff likely to be employed by the hospital would have to be adjusted to take this into account. It was estimated that a total of 1119 staff would be required.

5 Sources of supply

Four major potential sources of supply were identified.

1 From among present AHA staff primarily in units due to close with the opening of the new hospital.
2 From national sources.
3 From the labour force and labour reserve in Salop (excluding Telford).
4 From the Telford labour force and labour reserve.

Each major functional group – nursing, administrative and clerical, works, professional and technical, and medical – was dealt with separately. In many respects, the nursing group was the most complex. The staffing plan required not only specific numbers of qualified and auxiliary nurses, but also student and pupil nurses at various stages of training. With this group we began by determining the numbers and types of trainees who would have to be recruited at specific dates in order to provide the appropriate mix of first, second and third year trainees in mid-1986. We then looked at who could be transferred from units due for closure, and added tutors and clinical teachers to be seconded. Information about the qualifications of the unemployed in Salop and, more specifically, in Telford suggested that we could not look to recruit many qualified staff from among the unemployed. Analysis of the labour reserve with respect to nursing staff also suggested that there were relatively few people with nursing qualifications who might be drawn into employment with the opening of the new hospital, though we could look for more trainee nurses from the Telford area. It is expected that senior nursing officers and senior tutorial staff will be recruited from the national labour force. In practice, of course, it is likely that the new hospital will offer promotional prospects to some ward sisters currently working in Salop, Stafford and Wolverhampton hospitals. To the extent that these posts are filled by Salop AHA employees currently in ward sister posts, such posts will have to be refilled and some staff may be expected to come from national sources outside Salop. So long as the training element and the transfer element are realised, the relative balance of national versus local recruitment to the remaining posts is not crucial.

Relatively few administrative and clerical staff will be affected by closure, but most of those who are may be expected to transfer. There are considerable numbers of unemployed clerical workers in Telford and it should not, therefore, be difficult to meet the hospital's requirements from among the Telford labour force. The labour reserve study indicated that there are women not currently in employment who are looking for clerical and secretarial work, or for training opportunities before taking up such employment.

A small number of the works staff is expected to come from transfer of staff affected by closure. The remainder is expected to come either from among the unemployed or the labour force in Telford, or from the West Midlands conurbation via the Homes and Jobs scheme. The latter is a special scheme operated by Telford development corporation whereby skilled vacancies in the new town are advertised in the conurbation and housing is guaranteed in Telford.

Key ancillary posts are to be filled by promoting staff and by associated inservice training. Only a small proportion of the total ancillary staff requirement is expected to come from transfer. Domestic assistants, catering assistants, porters and laundry workers form the major groups here. Most of the catering and domestic assistants are married women working part-time. It is, therefore, unlikely that they will be prepared to travel to Telford to work. There are few porters or laundry workers in employment in the units affected by closure. Catering and domestic staff will be recruited from among the Telford labour force. It is expected that some porters and laundry workers will be recruited from the conurbation via the Homes and Jobs scheme. Some porters and operating department assistants will be recruited into special training programmes.

Professional and technical staff pose a major recruitment problem. Less than 10 per cent of the requirement will come from transfer. There are virtually no unemployed staff in the relevant categories either in Salop or in the West Midlands conurbation. Recruitment for such staff, therefore, will be in the national labour market. Where there are training schemes in the county, such as in physiotherapy and radiography, the number of training places can be enhanced. To encourage qualified school leavers from Telford to enter the paramedical disciplines, a number of bursaries is to be offered. Staff will be recruited into training posts in pathology from 1982 onwards. Various technician posts will also be staffed by recruitment into training from 1981 onwards.

Apart from the four full-time medical posts and the part-time clinical assistant posts, all medical and dental staff will be recruited from the national labour market.

In all, some 30 different codes were used to describe the sources from which recruits might be expected to be drawn. It is not suggested that the actual pattern will be identical to the staffing plan. The plan has considerable inbuilt flexibility. The training element is, however, relatively fixed. Decisions have to be made in 1980 for training programmes to start in 1980-83. Once such programmes have been set in motion, the numbers cannot suddenly be stepped up because of the long training periods involved. If, however, more staff than anticipated elect to transfer from the closed units, there will be fewer vacancies for people living in Telford. National recruitment requirements would be relatively unchanged because few of the staff affected by transfer are in the professional staff grades that we expect to have to recruit from outside the county.

6 Data preparation

The first step was simply to list each individual staff member required by each major functional group. Each job title was coded according to the DHSS pay-scale

codes and the WMRHA codes. Each code was given its appropriate CODOT classification to facilitate matching the requirements with the availability of suitable staff from among the unemployed. The tables will also provide a listing for the employment division of the Manpower Services Commission of the likely requirements for staff in 1986. Each post was coded to one of the six main functional areas. In this way the relative proportions of staff assigned to each group could be compared with the Capricode formula and the staff costs for each group computed. Each staff member was assigned to a specific physical location in the new hospital. This was mainly to check that certain areas had their appropriate complement of staff. Most posts were coded as full-time, but some nursing, ancillary and medical posts were coded as part-time. The source from which employees might be recruited could only be determined, and thus coded, after the study of staff in units affected by closure had been carried out. The date at which staff have to be recruited is determined by training and pre-training requirements worked back from the staffing structure in 1986.

7 Data processing

The data were punched into cards and analysed on the Salop county computer using the SPSS facility. The data are stored with their relevant programmes on disc at the county computer bureau.

8 Output

Only a limited output has been requested so far. Frequency counts for all the variables provided most of the information required to prepare the general document on staffing proposals.

A complete listing of staff required has been printed out, together with the associated DHSS pay-scale and occupational code. Similarly, a complete CODOT listing has been produced for use by the employment division of the Manpower Services Commission. Separate tables showing the staffing composition for each functional group have also been produced, and the revenue costs for each functional group computed. Tables giving grade by date of recruitment can be produced to facilitate the preparation of financial estimates between 1980 and 1987. Staffing lists for each department or each location in the new hospital can also be produced as required.

9 Working papers

In all, ten working papers have been produced over the six months, culminating in a document which specifies the policies which the AHA will need to adopt if the staffing plan is to be realised, together with the revenue consequences, action proposals, an outline timetable, the proposed staffing structure and the expected sources of recruitment. This document provides a framework for action and covers in some detail the years before the appointment of the commissioning team in 1984.

10 Modifications

The proposed structure will need to be modified in the light of changes which take place between now and 1986. Some staff groupings might be reduced as a result of technological innovations. Others might have to be increased if the working week is reduced or holidays are extended. The staffing structure provides a base-line to which such changes may be related.

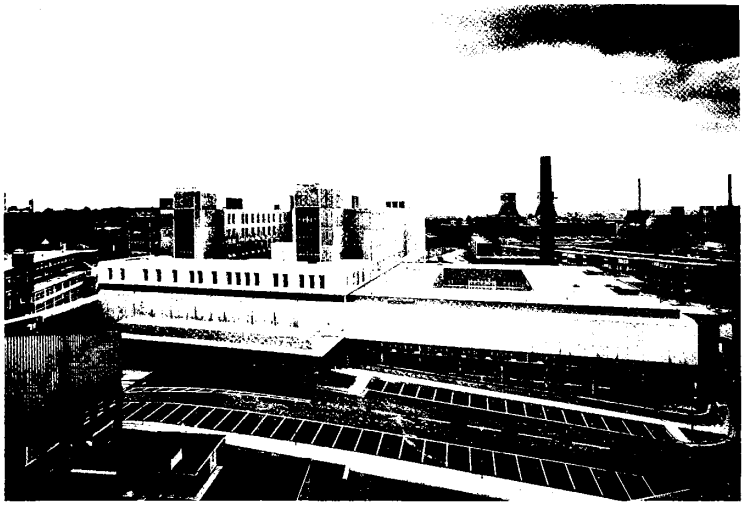
There is still a great deal of work to be done. What has been done so far represents little more than a preliminary canter. It will not do to assume that the current labour market will pertain in 1986. Telford Development Corporation undertake regular surveys in the Telford employment district and the AHA will be able to look to that work for much of the necessary information. It is anticipated that the AHA will, by its promotional and careers activities, be able to influence its potential labour market. Success in this is crucial. Recruitment to the hospital service from Telford will need to be monitored closely. The AHA will be looking for some natural wastage, as well as retirement, to ease staff redeployment in 1986. It will be necessary to look very closely at the stability profiles among present staff. Patterns of commuting need to be investigated more thoroughly, and the total AHA work force needs to be studied. For example, we have not yet looked at the proportion per 1000 population in the various local authority districts who work for the AHA. A survey of staff in units affected by closure will need to be undertaken in about 1984. The staffing structure will have to be modified as requirements change. The introduction of a 37½ hour week for nursing staff will affect the numbers of nurses to be recruited and may require some modification in the training proposals which have been put forward. Staffing Telford DGH is going to be a complex process. So far we have only considered the problem of creating a labour force with which the hospital can open. The continuing recruitment, training and deployment of this staff complement will have to be undertaken within the context of manpower planning for the area as a whole.

Appendix L Example of a newsletter

TABS
The Journal of South West District
LEICESTERSHIRE AREA HEALTH AUTHORITY (TEACHING)

LEICESTER ROYAL INFIRMARY SPECIAL

Facelift programme for the Infirmary



An impressive view of the new hospital building. Picture by Studio Colophon

Challenging prospect

The shape of the Leicester Royal Infirmary is changing. New landmarks are rising against the Leicester skyline—in the form of Phase Two, soon perhaps to have a more human-sounding title, the Clinical Sciences block and, coming very soon, its sister building the Pathology block.

That only takes us up to 1980, and there are more years of planning and building to come before the development programme nears completion. But it is a lot to be going on with—and since every member of staff at the Infirmary is likely to be affected in some way by the developments this edition of TABS has been designed to bring into focus the changes that are taking place now.

Phase One—better-known as the L.R.I.'s highly-regarded Maternity Hospital—started the programme off, and now Phase Two is almost ready for occupation. Such a huge project takes longer to get off the ground than most people are likely to guess. The first rumblings of Phase Two were heard back in 1962, and it is rather difficult to hang a date on the later developments in the pipeline.

The University of Leicester's new Medical School is now interwoven with the fabric of the L.R.I. in particular, and the other large hospitals in Leicestershire. Altogether it seems that this area is becoming an exciting place to work, despite our famous financial deficiencies.

It may be hard, as more modern brickwork, concrete and glass alter the appearance of the Infirmary site, not to think of it in terms of a separate hospital growing up alongside the existing one. But the intention is to integrate the old and new into a single entity as the original buildings are gradually updated.

The opening dates and timetables quoted in this edition are expected to be fairly flexible, and there will almost certainly be some adjustments, but they are the most accurate forecasts available at the time of going to press.

In this issue:

Centre Supplement:

The new building is one of the most influential advances in Leicestershire's health services. Inevitably, such a large and costly creation will devour large chunks of revenue.

But the existing Infirmary is getting some of the cake too. The opening of Phase Two will be the signal for an extensive upgrading programme to begin in the existing wards.

When the first four wards in Phase Two are open the three large wards in Oliver Block—Oliver, Rogers and Odames—will be closed down for upgrading. The primary aim is to improve the conditions for patients and staff and at the same time provide facilities for medical student teaching.

A look at the schedule reveals that a day room for patients, additional toilet and washing areas, improvements to the heating system and an over-haul of the windows are all part of the plan.

The hope is that when Oliver Block is back in use, the wards in Langham Block, followed by the centre block, will be given the same treatment over the next three or four years.

The implications of this programme of upgrading are that the number of beds in the hospital will be increased by 315 for about four years, until the work has been completed. At that stage the complement will be increased again by the number of beds in the upgraded wards. The proposals for the location of the beds by specialty are shown on the chart in the centre page supplement. Details are given up to the end of the upgrading period, though it has to be stressed that because of the financial uncertainties the upgrading of Langham and centre blocks cannot be regarded as firm until closer to the time when work is due to start.

Keeping nurses in the picture

"The additional new buildings at the Leicester Royal Infirmary offer a tremendous challenge for existing staff as much as for new nurses who will join us from elsewhere", says Miss Daphne Hussey, District Nursing Officer. "Our need will be for many more nurses if we are to meet the challenge of this new unit. I hope that existing qualified staff as much as the students will be encouraged by the thought of the many new opportunities there will be for them to use their considerable skills in Leicester".

The Infirmary's increased need for nurses means that there will be many opportunities for students and nurses qualifying from now on. Every effort will be made to give those joining the staff their first choice of ward or department, and it is hoped that the majority of interests will be satisfied.

All junior posts will be advertised internally, either in advance of any national advertising campaign or at least at the same time. The advertisements will explain clearly how students or others should apply.

Nearly all sisters and charge nurses whose wards are moving into Phase Two will by now have had discussions about the way the changes will affect them. Any outstanding meetings should be completed fairly soon. Staff nurses, enrolled nurses and nursing auxiliaries should also be fully in the picture about the proposed changes as a result of their unit meetings, although they will be getting more information as time goes on.

Senior nursing officers and nursing officers in post have been concerned with the commissioning programme from its earliest days, and sisters on both day and night duty are becoming more closely involved in a similar way.

New department will care for hospital staff health

On level 0—the ground floor—of Phase Two staff will be able to find the Occupational Health Department, whose job is to care for the health of employees at work, and to contribute to the health, safety and welfare of hospital staff.

The department, which will be run by a Medical Officer, will have medical responsibility for the occupational health of all staff at the L.R.I. and Fielding Johnson Hospital including area-services staff based at the Infirmary and the District offices, although initial treatment for all accidents to staff will be provided by the Accident and Emergency Department. Staff in the inner sector of the South West District community services will also be covered by the scheme.

Pre-employment examinations and screening for staff will be arranged by the department. They will also be involved in staff occupational health counselling, immunisation, control of infection, planning a health education programme and working closely with the Safety Committees as they are set up under the Health and Safety at Work Act.

Spacious new accommodation for Rehabilitation

The new Department of Rehabilitation in Phase Two will provide the Infirmary with a large Hydrotherapy pool as well as better equipment and more spacious accommodation for Physiotherapy and Occupational Therapy.

The Physiotherapy unit will have physical treatment cubicles and two new gymnasia, and the facilities in Occupational Therapy will include a heavy and light workshop and an area for domestic training, fitted with a kitchen, bedroom and bathroom.

C.O.D. innovation gives Infirmary the edge

An innovation in the L.R.I.'s new Central Operating Department will give the Infirmary an edge over most other hospitals in the country when it comes to making patients comfortable.

To minimise unnecessary movement and lifting of the patient in the C.O.D., the Maquet System of mobile theatre table tops, developed in Germany is being installed. The patient is taken to the Department in his bed, lifted onto the table top in the transfer bay and moved by transporter to the anaesthetic room and from there into the theatre where the table top forms an integral part of the operating table itself.

After the operation the patient is taken, still on the table top, to the recovery room. When he is considered ready for return to the ward he is moved back to the transfer bay and once again lifted onto his own bed before being wheeled back to the ward.

The L.R.I. is one of a handful of British hospitals to install this system, which ensures that the patient suffers a minimum of discomfort caused by avoidable lifting, and that he benefits by the care and supervision in a special recovery area before returning to his own ward.

● **The Central Operating Department consistes of 12 suited theatres, each provided with its own anaesthetic room, scrub room, preparation and disposal rooms.**

New idea for Theatre Service Centre

The Theatre Service Centre is a new concept for the Leicester Royal Infirmary—a special department next to and communicating with the Central Operating Department itself, reponsible for preparing and sterilising a tray system of all items needed for the operating theatres.

A complete sterile tray pack will be provided for each operation, with instruments, towels, drapes and dressings, so that the scrub nurse needs only to open the pack which is then ready for immediate use in the theatre.

After the operation the used trays are returned to T.S.C. for cleaning, checking and reprocessing before being returned to the C.O.D. sterile store.

The Centre will be staffed by Ancillary workers under the overall supervision of the T.S.C. Superintendent.

After delays opening sequence gets ready to start

Phase Two was started in May 1973 and was scheduled for completion in May this year.

But delays in the contract led to a later handover date than had been hoped, and the building finally came into the possession of the Area Health Authority on September 19th.

Inevitably, during the years since the tender was originally let for work to start on building Phase Two, there have been a number of changes in practice which require minor alterations to the building. This is usual with hospital developments of this size and complexity. It means that though the building has been handed over, the opening sequence will not get under way until these post-contract modifications needed for the departments to function effectively have been completed. A further contract for this work has been let, and when it is finished the first stages of commissioning can start in earnest—cleaning, checking equipment already installed, putting in telephones and the delivery, checking and siting of loose equipment.

The original opening sequence has had to be revised in the light of two sets of circumstances—the four month delay in the handover date and the shortfall in the allocation of revenue funds needed to run Phase Two. The impact of the delay in the allocation is well-known—the programme has been stretched over a great length of time and the final 120 beds in Phase Two are not likely to be available until February 1979. The revised programme—the latest at the time of going to press—is on the pull-out centre pages.

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Appendix M Transfer of staff: addendum to contract of employment

NOTTINGHAMSHIRE AREA HEALTH AUTHORITY — SOUTH NOTTINGHAM DISTRICT

Impact on Staff of Service Changes in South Nottingham District

Introduction

Health Service developments affecting South Nottingham District are planned for implementation during the 1980s and will affect employees. The major developments in the District will be the opening of Phase II of University Hospital and changes in the Mental Illness Services in Nottinghamshire during the decade.

As a result of developments and as an employee of this District it is possible that you may be required to transfer your place of work, and the following Policy Statement from the District Management Team sets out for your guidance the principles which will govern the situations that arise.

This document does not apply to the effects of any reorganisation in the structure of the NHS, for which separate procedures will be prepared.

1. The District Management Team values the contribution made by staff and wishes to assure them that the individual interests of staff will be carefully and sympathetically considered.

2. The District Management Team has sought in a variety of ways to keep staff and their representatives informed of the District Plans and their implications. Where staff are directly affected by the Plan, the following guidelines will operate.

3. **Transfer and Redundancy**

   3.1 The overall development of health services in the District and mental illness services throughout the Area will require more rather than fewer staff to play their part in the provision of health care, and the District Management Team will make every effort to ensure that there will be no redundancies. However, the pace of development is largely determined by government economic policy and there may be instances where particular areas of work are reduced or no longer required. If this happens some particular posts will become redundant. The District Management Team will seek to identify suitable alternative employment for staff affected in this way — for example, transfer to a post vacant as a result of normal staff turnover. ("Suitable alternative employment" is defined in paragraph 9, Section XXV of the General Whitley Council Handbook — for convenience this is attached at Appendix I).

   3.2 Where services are physically transferred to another location, staff will be required to move to a new base. This will be done in consultation with the staff concerned, their Departmental Heads and Trade Unions/Staff Associations.

   3.3 Where staff are required to transfer from their base, the excess travel conditions of the General Whitley Council will apply (See Appendix I).
   Where staff have acute difficulty moving to a new base, every effort will be made by Appointing Officers and the Personnel Department to secure suitable alternative employment.

4. **Recruitment and Promotion**

   4.1 When staffing requirements of a development are decided, the filling of posts will be undertaken in two ways:–

   (a) transfer on the same grade;

   (b) recruitment.

   4.2 Not all posts may be filled by transferring existing staff. This will be because:–

   (a) more staff of a particular grade are required than the District has in post at that time;

   (b) in order to maintain an experienced and balanced workforce some staff of particular grades will be required to maintain the service in existing hospitals/community premises.

   4.3 Where posts are not filled by transfer, open recruitment will operate. This will be on a local, regional or national basis, as appropriate for the grade and category of post in question. (Subject to 4.4 and 4.6 below.)

   4.4 Preferential Consideration Interviews

   Where a new post is created and there is in the District an employee whose existing grading would suffer because of the development of this post and service, then preferential consideration will be given to the employee(s) in question for the new post.

   4.4.1 The purpose of the preferential consideration interviews will be to consider whether any of those eligible and who accept the invitation to such a preferential consideration interview can do the job to the required level. This will not involve consideration of whether they are the best who could be appointed in conditions of open competition, although where more than one person is being considered the panel will appoint the preferential candidate whom it considers can best do the job at the required level.

   The panel will comprise those normally involved in selection to the grade of post in question, together with an outside assessor.

If the post is not filled at the preferential consideration interview stage, any person unsuccessful at that stage, and those who may not have chosen to be so considered, will be free to apply in open competition, or they will be offered suitable alternative employment, with protection where appropriate within the Whitley Council Regulations.

4.5 Where the creation of a new post does not adversely affect the grading of any existing employees, they will be free, with others, to apply for promotion in open competition for a post (subject to 4.6 below).

4.6 Limited Competition Interviews

Where there are one or more members of staff for whom, as a result of the considerations in paragraphs 3.1 and 3.3, suitable alternative employment has been sought but unsuccessfully and where there is a promotion opportunity for such staff in a suitable location (i.e. a new unfilled or vacated post on a higher grade), then the possibility of "limited competition" will be considered.

4.6.1 "Limited competition" will only apply where it provides the only opportunity for providing suitable alternative employment for staff who would otherwise have their employment terminated on grounds of redundancy. Competition for the post will be limited to such staff for whom the promotion step is not, prima facie, unreasonably large and to other staff who, not threatened with redundancy, might reasonably aspire to secure such a post and whose appointment to that post would open up a suitable alternative employment opportunity for the staff facing termination of employment on grounds of redundancy. Staff not facing redundancy or whose appointment to the vacant post would not open up a direct opportunity to provide suitable alternative employment would not be considered unless "limited competition" interviews resulted in the post still remaining vacant.

4.6.3 Under "limited competition" the interviewing officers will exercise an identical judgement to that described in 4.4.1 for preferential consideration.

5. The Pattern of Discussion with Staff

5.1 There will be the following pattern of open meetings and individual discussions.

Open meetings — for general dissemination of information.

Departmental meetings — to explain and discuss changes in services.

Individual discussions — to discuss their working circumstances with each individual employee.

Sometimes it will be appropriate to combine open and departmental meetings.
Trade Union and Staff Association representatives are welcome to any of these sessions.

5.2 Individual discussions will be held with all staff affected, including staff appointed on District Rotational Schemes. At these discussions the Appointing Officer (or deputy) will be accompanied by the appropriate Departmental Head.

5.2.1 Individual members of staff may be accompanied by a staff organisation representative or a friend if they wish. This will be drawn to the attention of staff by the management when they are invited to transfer discussions.

5.2.2 The individual discussions will cover the following points:–

(a) the way in which hospital services in general are developing.

(b) the way in which the individual's own department or service is changing.

(c) a discussion of the individual's own aspirations and wishes on the one hand and the management's proposals for the individual's future role, place of work and conditions of employment on the other hand. The extent to which the management's proposals are firm or tentative will depend on the circumstances of the department or service concerned.

(d) a description of what the individual's entitlement will be to excess travelling expenses (which are taxable), and, in some cases, removal expenses.

(e) that where an individual is not able to fulfil a service requirement to transfer to a new place of work, his Appointing Officer and Departmental Head will make every effort to secure alternative employment with the assistance of the Personnel Department, if necessary (e.g. for transfers outside the South Nottingham District). Similarly to make it clear that where an individual who does transfer and finds within the first four weeks that the new employment is not a suitable alternative, he or she should notify the Appointing Officer so that efforts can be made to find suitable alternative employment.

5.2.3 It is not necessarily the intention to arrive at a conclusion about the individual's future role during the first discussion. In some cases it will be easy to agree with the individual there and then what their future role, place of work and conditions of employment are to be. In other cases it will be necessary to agree to have a further discussion to be held after the individual has had a chance to consider matters on his own (and seek advice from a staff organisation if he wishes) or after the management have had an opportunity to consider the individual's wishes and circumstances in the context both of other members of staff's wishes and circumstances and the requirements of the service.

Where a whole department/service transfers, all staff will be required to transfer, unless it is not necessary, or not possible for an employee to move. In these cases, suitable alternative employment will be offered wherever possible.

Where only a proportion of a service or department transfers, the decision as to which posts (and staff) transfer will be made by Appointing Officers and appropriate Departmental Heads in conjunction with the member(s) of staff and trade unions/staff associations. To ensure consistency and fairness guideline criteria will be established within which these decisions will be made, e.g.

(a) Place of residence of the individual employee.

(b) Length of service of the individual employee.

(c) The need for, and appropriateness of giving, re-training.

(d) The need to maintain adequate service.

5.2.4 It is anticipated that in the vast majority of cases the discussions will result in mutually acceptable arrangements consistent with the principles at sections 3 and 4 of this paper. The staffing levels required in, for example, University Hospital will give scope for sensitive matching of people to posts.

6. Departmental Heads

The District Management Team acknowledges the position of Departmental Heads and will keep them informed of developments and their progress, recognising the implications which developments might have for Departmental Heads and for their grading. The principles of this document will apply to them, as to all other staff.

7. Where discussions do develop between the management and an individual arising out of paragraph 5.2.2(e) the procedures and rights laid down in the Employment Protection Acts and Section XXV of the General Whitley Council will be observed.

8. This document supersedes any previous documents on this subject.

18 March 1980

APPENDIX I

1. Extract from Section XIX of the General Whitley Council Handbook.

"Change of headquarters resulting from amalgamation of authorities or concentration of an authority's services or from acceptance of another post in consequence of redundancy at previous place of employment.

"An officer who is required to change his headquarters as a result of the amalgamation of health authorities or a re-organisation of an authority's services or of his acceptance of another post in consequence of redundancy at his previous place of employment may be reimbursed the whole of his extra daily travelling expenses for a period of 4 years from the date of transfer to the new headquarters. The excess shall be calculated on the basis of bus fares or second class rail fares or, if the officer travels by a private vehicle, on the basis of the public transport mileage rate."

Such expenses will be subject to taxation.

2. Extract from Section XXV of the General Whitley Council Handbook, paragraph 9. Arrangements for Redundancy Payments.

"'Suitable alternative employment' for the purposes of paragraph 8 refers both to the place and to the capacity in which the employee would be employed. The following considerations shall be applied in deciding whether a post is suitable alternative employment and whether it was unreasonably refused :–

"(a) **Place.** A post is normally suitable in place if it involves no additional travelling expenses or is within 6 miles of the employee's home. If the new post is at a greater distance, the fact that assistance will be given with the extra travelling expenses (see paragraph 6 Section XIX), will normally outweigh any added difficulties in travel, but exceptionally an employee's special personal circumstances will be considered in comparison with travel undertaken by other employees in comparable grades. If the post is too far for daily travel, it will be reasonable since removal expenses will be payable, to require staff (other than those who can be expected to seek employment in their neighbourhood) to move home unless they can adduce special circumstances such as age.

"(b) **Capacity.** Suitable alternative employment may not necessarily be in the same grade; the employment should be judged in the light of the employee's qualifications and ability to perform the duties. Nor need it be at exactly the same pay. A post carrying salary protection for the employee should on that fact alone be treated as suitable in capacity."

DL/PMC/S15/128
18 March 1980

Appendix N A checklist of DHSS recommendations on fire precautions in a new hospital

STAFF INDUCTION AND ORIENTATION

1 Contingency plans should have been drawn up for dealing with a fire outbreak. These should include procedures for raising the alarm, fire fighting and the movement or evacuation of patients to a place of safety in an emergency.

2 Ensure that staff are aware of these plans, that they know what to do in the event of a fire and are conversant with escape routes.

3 Explain to staff by using plans and touring areas, the layout of the building, pointing out fire compartment boundaries, fire assembly areas, which doors are fire/smoke stop doors, and where internal and external fire escape stairs lead to or terminate.

4 Explain how the fire alarm system operates and what action is required according to which alert sound is heard, ie, continuous or intermittent. Sound the alarm, making sure everyone is aware that it means fire alert. Also, if lights are used for fire alert, for example, in operating theatres, intensive care units, and so on, ensure that everyone is aware of colour used and what a steady or flashing light indicates.

5 In patients' areas, staff should make sure that a bed or stretcher trolley will pass through all escape route doors to a place of safety.

6 Ensure that staff are shown the position of the following

a Fire alarm break glass units

b Emergency and ordinary telephone positions

c Fire exits and method of opening; for example, push bar, break glass, and others

d Fire instruction notices

e Fire extinguishers and method of operation

f Fire hosereel positions and method of operation

g Position and how to use evacuation equipment where installed

h Position of floor plan of their department showing escape routes

i Piped oxygen control valves.

STRUCTURAL ITEMS

External

1 Access roads and entrances for fire appliances from main highways to be clearly signposted.

2 Fire hydrant marker plates to be at correct height for easy location.

3 Fire hydrant covers to be painted yellow.

4 Foam inlet boxes to comply with British Standards Codes of Practice.

5 Dry rise inlet boxes to comply with British Standard Codes of Practice.

6 Fuel oil tanks to have bond wall protection with drainage sump.

7 Liquid oxygen and medical gas cylinder storage to comply with safety codes of practice and appropriate warning signs displayed.

8 Fire exit doors to be marked 'FIRE EXIT – KEEP CLEAR'.

9 Fire escape stairs to have notices displayed 'FIRE ESCAPE STAIRS – DO NOT OBSTRUCT'.

10 Fire alarm indicator panel and plan of site to be positioned at main entrance reception for the fire brigade's information.

Internal

11 Check fire and smoke doors for correct fitting in frames with no gaps where doors meet and that rebates are at least 25mm in depth. Self-closing devices, where fitted, should close doors completely.

12 Where corridor and fire compartment doors are held open by magnetic devices which release doors when the fire alarm system is activated, signs to be displayed stating 'THESE DOORS CLOSE AUTOMATICALLY WHEN FIRE ALARM IS OPERATED'.

13 Fire exit doors to be clearly marked 'FIRE EXIT' and method of opening defined. Check for ease of opening.

14 Fire escape route corridors to have adequate direction displayed with arrows indicating direction of escape.

15 Fire alarm to be audible in all areas.

16 Break glass fire alarm points to be clearly marked.

17 Fire indicator control panels to be clearly marked with drawing of area it covers displayed.

18 Check that fire alarm supply batteries and trickle charger are functioning.

19 Test fire detectors.

20 Ensure that adequate fire instruction notices are displayed.

21 Ensure that piped oxygen control valves are clearly marked.

22 Ensure that all other service valves and switches are clearly marked.

23 Ensure that fire dampers are fitted in air-conditioning and extract ducts and their positions clearly marked for reset purposes.

24 Dry riser outlet valves to be clearly marked and blank caps fitted.

25 Fire extinguisher positions to be clearly marked.

26 Fire hosereel positions to be clearly marked and operating instructions displayed.

27 Firemen's lift control switches to be clearly marked.

References and recommended further reading

Note: This list is intentionally selective. It contains all the references mentioned in the text and other annotated references which commissioning teams are advised to read. Readers who wish to study commissioning in greater depth are advised to obtain the excellent survey of the literature from 1961 to 1980 prepared by L C Howell and available from the Department of Health and Social Security Architectural Library.

1 BATTERSBY, A. *Network anaylsis for planning and scheduling: studies in management*. Third edition. London, Macmillan and Co. Ltd., 1978. pp. 218.
A comprehensive guide.

2 BAYNES, K., LANGSLOW, B. *and* WADE, C. *Evaluating new hospital buildings*. London, King Edward's Hospital Fund for London, 1969. pp. 76.
Advises on methodology and when to evaluate.

3 CATLIFF, G. C. *Critical path analysis as an aid to hospital planning. British Hospital and Social Service Journal*, vol. LXXIV, no. 3879. 21 August, 1964. pp. 1204-1206.
Still one of the best articles for readers requiring a clear introduction.

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Primarily of use to supplies staff concerned with equipping major projects.

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Report of a conference.

7 GIBSON, I. R. L. *Commissioning hospital projects – management or mismanagement? Hospital and Health Services Review*, vol. 76, no. 8. August, 1980. pp. 275-276.
A challenging article on what is successful commissioning.

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Draws attention to some of the deficiencies in policies written for new hospitals and sets out the essentials of good policy documents.

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The definitive official guide.

10 GREAT BRITAIN. DEPARTMENT OF HEALTH AND SOCIAL SECURITY. *Closure or change of use of health buildings*. London, DHSS, 1975. *HSC(IS)207*.
An official circular: includes an explanation of the consultative procedures which health authorities are required to follow.

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A paper by the DHSS manpower intelligence unit which collects information on staffing norms.

13 GREAT BRITAIN. DEPARTMENT OF HEALTH AND SOCIAL SECURITY. *Nucleus hospital project: standard department data packs*. London, DHSS, 1978.
A comprehensive and detailed guide of several volumes on the nucleus method, which also contains useful material for other methods. Includes full details on activity and space data sheets.

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The principal official guide.

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A brief explanation of how the nucleus method developed from the 'harness' and 'best-buy' systems.

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A paper based on studies by the Scottish Home and Health Department and the Scottish Hospital Centre.

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Describes an imaginative approach to public relations in preparing a community for a major change in its health services.

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A guide to how to consult, how to close a building and set about disposing of it.

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Describes the commissioning of the William Harvey Hospital, Ashford, Kent.

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A chronological analysis of the development of the guidance on hospital design. Note also, the research unit is a useful source of information on hospital design and building.

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Full of useful advice and warnings.

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The best guide for newcomers to commissioning.

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Explains the computer systems for scheduling and cost control of equipment.

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How a computer system can help control the commissioning programme.

Index

The task of commissioning new hospital buildings presents those involved – doctors, nurses, administrators and hospital managers – with one of the most challenging experiences of their careers. For many of them, it happens only once. It is helpful therefore to anticipate the experience by learning from those who have been through it before. This book brings together much of the expertise now available in the British National Health Service, tracing the commissioning process from its beginnings through to the time when the hospital is fully operational.

This edition of the guide, the only one of its kind in hospital literature, supercedes the very successful earlier editions by bringing the subject up to date. Although it is written in the context of the British health care system, the managerial principles and much of its advice are applicable to new hospitals all over the world.

Operational systems, equipment and supplies, personnel management, public relations, engineering services and financial control are the main subjects individually discussed, but teamwork and the vital managerial task of coordination are emphasised throughout as the main prerequisites for success.

'To those specialists who want a useful handbook and those managers who want to improve their knowledge of the subject I recommend this book.' *Nursing Mirror*

'. . . an authoritative work which should become essential reading for all who are in any way involved in the complex processes necessary to ensure that when a new hospital opens its doors it provides the services its designers intended.' *Building*

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