A METHODICAL APPROACH TO FORMULATING THE CLIENT USER INPUT TO A DESIGN BRIEF FOR HEALTH BUILDING

VOLUME 1 : TEXT AND REFERENCES

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ABSTRACT

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This work involved a world wide search of literature on design briefing in general and briefing for health buildings in particular. A critical review of the literature has revealed that methods used currently to formulate client user requirements for a brief are varied and haphazard, despite the generally held importance of the brief.This apparent deficiency it is argued, often results in misunderstanding of the real user requirements by not providing adequate organisational data upon which an economical design can be based.

Seven well documented methods of preparing design briefs are examined in depth and considered inadequate for general use. The work proposes a new method which offers a structured approach, enabling the user input to the brief to be organised in such a way as to encourage a more thorough consideration of particular requirements. The new approach helps to identify the implications of selecting specific design options and expedites agreement of the design brief, thereby making better use of project team members time and ensuring an accurate and logical way of recording decisions.

The work demonstrates the initial development of the proposed new briefing method which was tested in six field trials. The resultant briefs provided the design teams with well considered intelligible user requirement data. Although for trial purposes the documentation concentrates on briefing data for health centres and hospital departments, the work concludes by proposing in outline how the systematic approach could be applied eventually to whole hospital planning decisions.

CONTENTS

(VOLUME 1) PAGE

PART 1

ILLUSTRATIONS

PAGE

(VOLUME 2)

APPENDICES PAGE

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PART 1

1. INTRODUCTION

1.1 Aim of the investigation - why is a brief necessary?

Methods used currently to formulate user requirements at the briefing stage for health buildings are varied and haphazard. Often inadequate information is given to the design team, misunderstandings of the real user requirements occur, and because the planning process is complex, this information gets further jumbled in the protracted period of time required to prepare the brief. In addition to causing delays in the planning stages, incomplete information at the briefing stage can be shown to have serious implications for the subsequent commissioning and evaluation of the building.

The aim of this work is to test the hypothesis that:-

> "by adopting a structured approach to health building design briefing, firstly, the user input to the brief can be organised in such a way as to encourage a more thorough consideration of their requirements, and identify the cost and special implications of selecting specific design options. And secondly, that such a method could expedite agreement of the design brief, thereby making more efficient use of project team members' time".

If the general hypothesis is verified it will be developed further to encompass that:-

> "such a methodology extended to whole hospital or health building could result in more efficient service and capital planning in the National Health Service (NHS), and provide a user requirement data base from which future decision making can benefit".

1.2 Background

In order to test this hypothesis a decision had to be taken on how far back one needs to look at design briefing in general and briefing for health buildings in particular. Scrutiny of published material revealed that little had been written specifically on design briefing before the second world war and the inception of the National Health Service (NHS) in 1948. It was not until the 1960s, that papers on the subject began to appear in any noticable number, and many of these made but cursory reference to the importance of an ordered brief.

In 1937 a Departmental Committee on the Cost of Hospitals and other Public Buildings was set up by the then Ministry of Health in a Minute dated 5 July. (Ministry of Health (MOH), 1937) The terms of reference were as follows:

> "To consider and report on the questions of the capital cost of construction and the annual cost of

> maintenance of the following classes of public buildings provided by Local Authorities, viz. hospitals (including mental hospitals), public assistance institutions, mental de-ficiency institutes, maternity homes (including maternity departments newly constructed or added to hospitals), and baths and wash houses, special regard being paid to a) the establishment and periodic revision of standards; b) modern methods of construction; and c) the possibility of securing a reduction in present costs without impairing the efficiency of the buildings for the purposes for which they are designed". (Ministry of Health (MOH), 1937)

This report was the forerunner of more specific guidance on health building which began to appear over twenty years later, and there were only two paragraphs in the 84 page report which referred to the need for briefing (and a recognition even in 1937 of the complexity of hospital planning). The committee were of the opinion that,

> '...If satisfactory results are to be obtained without unnecessary expenditure, it is essential that the whole project should receive full and careful preliminary study. The particular requirements of each section must first be carefully formulated. These are the data that must be supplied to the architect and the engineer before they can begin their work of planning.

'For the production of a well conceived scheme the close collaboration of medical, nursing, administrative architectural and engineering advisers will be necessary, and, if possible, their combined advice should be obtained even before the site is selected. This collaboration should continue throughout all the subsequent stages.'

The National Health Service Act became law in 1946 and by Statute it became the duty of the Minister of Health to provide throughout England and Wales, amongst other things, hospital accommodation. In planning terms the identity of the client was reasonably clear, but since then each successive Minister has had a different interpretation of his duty as laid down in the Act '...to provide accommodation to such extent as he considers necessary to meet <u>all reasonable requirements'</u>.

Reviewing the design of modern hospitals since the second world war, Cusdin (1966) found that the establishment of the NHS in 1948 encouraged the concept of teamwork, for there was,

'... a growing recognition and acceptance of the concept that the design of a hospital was no longer the work of an individual, but of a team, consisting of the doctors, nurses, administrator and architect, and engineers and quantity surveyors. At best the hospital could only be as good as the brief. The problems of

function and of planning can only be determined by the examination of the problems of both aspects by the team. The picture of the lone architect presenting beautiful perspectives and drawings to the Board is now faded, and in its place was a starry-eyed team of doctor, nurse administrator and architect submitting a glossy A4 report....'

The Ministry of Health in fact set up divisions representing these various interest groups to coordinate planning policy. Similar groups were established at each Regional Hospital Board (RHBs) and most of the Boards of Governors of teaching hospitals (BG) set up multi disiplinary planning teams to advise on the planning and design of new premises. The Minister had a Chief Architect who was mainly advisory, and incidentally shared with another Ministry, but it was not until 1958 that the architects department at the Ministry was enlarged and placed under the control of its own Chief Architect.

The immediate post war period up to the mid 1950s was a difficult one in the NHS. There was a legacy of old pre war and more recent wartime temporary hospital buildings, many of which had reached the end of their useful life and much war damage needed rectifying. The period was one of austerity for all and despite the commitment of the new government to the NHS, the service had to take its place in the public

sector queue for limited financial resources. The newly constituted RHBs tackled the complex task of NHS building and the Ministry issued Memoranda which involved advice on hospital building operations.

In 1953 the Ministry produced a Hospital Building Operations Handbook (HBO) which consolidated all the memoranda on hospital building operations which had been circulated to Regional Hospital Boards (RHB), Board of Governors (BG) and Hospital Management Committees (HMC) series (MOH, 1953) The document superseded about 70 circulars dating back to 1948. The HBO Handbook was in nine parts as follows:

1. Outline of Building Contract Arrangements Generally.
2. The Hospital Building Programme.
3. Planning and Bye-Law Controls, etc.
4. Starting Date Procedure.
5. Definitions of Capital and Maintenance Work.
6. Works Financed from Non-Exchequer Sources.
7. Housing proposals - New Works and Conversions.
8. Materials.
9. Contract Procedure.

It is not the purpose of this work to describe and evaluate the HBO in detail for this has been done already (Moss, 1974). However, in respect to user briefing procedures, the HBO now seems rather deficient and this is evident particularly in part 2 of the document. RHBs and BGs were

asked to look well ahead in the planning of the capital works programme and take into account certain government priorities. As part of the procedure it was necessary to seek formal approval from the Minister of Health for building schemes costing more than £10,000. (1953 prices) Though authorities were expected also to describe schemes between £1,000 and £10,000, to enable the Minister to form a clear picture of what was proposed, it was not necessary to seek formal approval for these and they could be carried out as 'minor works'. We have a very sketchy picture of the standard of briefing input to both large and minor capital schemes in the 1950s. It is perhaps significant that the Minister required RHBs and BGs to 'make a case' for approval of capital schemes by letter. There was no requirement for operational data and it is therefore difficult to judge the extent to which this formed an essential part of schemes, and how schemes could be evaluated for approval.

Certainly the HBO was a new concept, for it not only set out the way in which building programmes should be prepared, but also offered detailed guidance on the way to process individual schemes above or below £10,000. Some indication of the development of design briefing at that time was given by Moss (1974) who reviewed the role of the HBOs. He stated,

> '... A considerable organisational impact was felt at planning authority level in that a number of "hurdles" were erected over which each scheme had to jump before

it was approved. And, the results were readily visible in the way that project teams organised themselves to prepare design briefs whether the scheme was to be carried out "in house" or not. In the case of a scheme over £10,000 the hurdles were: 1. Programme; 2 Case of need; 3 Sketch plans and estimate; 4. Plans, specifications, Bills of Quantities, the firm starting date; and 5. Tender...'

It was 1961 which saw the start in an expansion of the NHS building programme. The Ministry of Health (1961) issued a circular entitled 'A Hospital Plan for England and Wales' which for the first time the Minister asked RHBs and BGs to look at their long term requirements and submit proposals for capital development over the following ten years. This opened a flood gate as authorities grasped the opportunity to try and modernise their facilities and improve the range and standard of health care. This first stab at overall planning control needed revision in 1966 when it became steadily clearer that the plan could not work out as intended. (MOH, 1966) The revision was needed for as a leading article in the Hospital (1966) stated it was necessary,

'... to allow for greater increases in population than had been expected, to make a greater allocation for geriatric and psychiatric provision and above all because a detailed but not precisely costed list of schemes could not be matched to the amount of money available...'

The 1966 plan (MOH, 1966) predicted a total expenditure on hospital building of about £1000m over a period of 10 years. The revised plan presented to Parliament acknowledged that in the early days of the NHS there was little experience in the design of modern hospital buildings. It was thought that a larger hospital building programme and more experience of hospital planning would make it possible to take advantage of the unity of the British hospital service and 'make available for use of all hospital authorities the distilled experience of the hospital service in Britain and elsewhere.' The document commended the use of building guidance being issued by the Ministry and thought the revised plan would bring a greater realism to hospital planning.

The plan appeared to offer the prospect of a rapid acceleration in the modernisation of British hospitals. The means were to be available both in finance and technical expertise, for as Cusdin (1966) pointed out,

> '...What had been no information at all in the late 1940s became an embarrassement of riches by the middle 1960s, for, at this time, we saw the beginning of the publication of what are now sometimes cynically called "The New Statutes of Lambeth (Elephant and Castle Ward). I mean the list of publications from the MOH referred to as design guidance'

But despite the increasing availability of planning guidance, a warning was sounded by an anonymous medical consultant (Lancet, 1966) who referred to reports of the indifferent progress that the MOH was making in its hospital building programme. He pointed out that little seemed to have been written about the extraordinary buildings that the Ministry, when it did have the money, was putting up and calling hospitals. The writer indentified a lack of user input to planning and suggested that in the new hospitals that had been built 'the consultants had largely been excluded from planning with disastrous results'. He listed numerous examples of bad design where administrators had chosen to exclude the real users from the planning stages. The writer recognised that,

> '... not every medical man is interested in planning, or is even able to understand an architects drawing. But it is also true that many architects are kept completely in the dark about what is supposed to happen in the buildings they are to design ... But many is the hospital architect who has said in conversation with the consultant " Well, if I only had known beforehand"... (Lancet, 1966)

To succeed, it appears that the extensive revised hospital building programme launched in 1966 required close collaboration between users and designers. If the article in the Lancet described the true situation regarding

multidisciplinary involvement in planning and design at that time, then acceleration of the health building programme had considerable implications. There was the need for the client/users to be generally involved in the preparation of the design brief otherwise the results might be nothing short of disastrous in terms of acceptable buildings.

2. THE BRIEF

2.1 Almost two decade ago Oliver Cox (1968) suggested that the 'need for brief making is more pressing today than ever it was'. He was referring to the magnitude and complexity of planning and increasing pace of technological and social change, which had made it necessary to hold objectives continually in review. Cox considered two main factors which had brought brief making into the lime-light.

> '... most architectural tasks and all planning tasks involve many people before decisions and solutions are eventually arrived at; on the one hand there are the "problem setters" representing many people or groups while on the other hand there are the "problem solvers" who work in teams involving many different skills. Rapport is essential if co-ordinated creative thinking is to result ..... some area of common agreement must be found ..... The statement of objectives that forms the brief can provide this common area of agreement .... Many of our development and building processes go on over a very extended time scale during which it is perfectly possible for many new faces to appear on, and disappear from the stage!

The need for brief making has not diminished, for the brief remains a major element in processes such as the setting up

of say either a research project or, the design of a building, Although this work is mainly concerned with that particular briefing which is associated with the design of buildings, it should be recognised that briefs of quite another kind should preceed this and provide an input to the formulation of a design brief. For example, in the National Health Service (NHS) strategic and operational planning (DHSS, 1982) for the service requirements of a health district may involve the generation of a series of briefs which contribute to the ultimate design of buildings.

The service development needs of a health district may include plans for some major capital developments. On the other hand, it might prove possible to provide a high proportion of additional services by adaptations and developments of existing hospitals at considerably less cost (DHSS, 1982). A series of briefs can emerge, each tested in terms of feasibility and cost against the options available. The ultimate agreed brief then forms an input of operational policy decisions to the design brief whether this be for new or upgraded accommodation (Fig 1).

The assumption that the brief plays an important part in the production of buildings is borne out in the architectural press, although there are some architects who consider that too detailed a brief may inhibit innovation and design and more important inhibit future change (Weeks, 1973; Trimble et al, 1972, Heath, 1970). But 'brief' is a rather vague term,

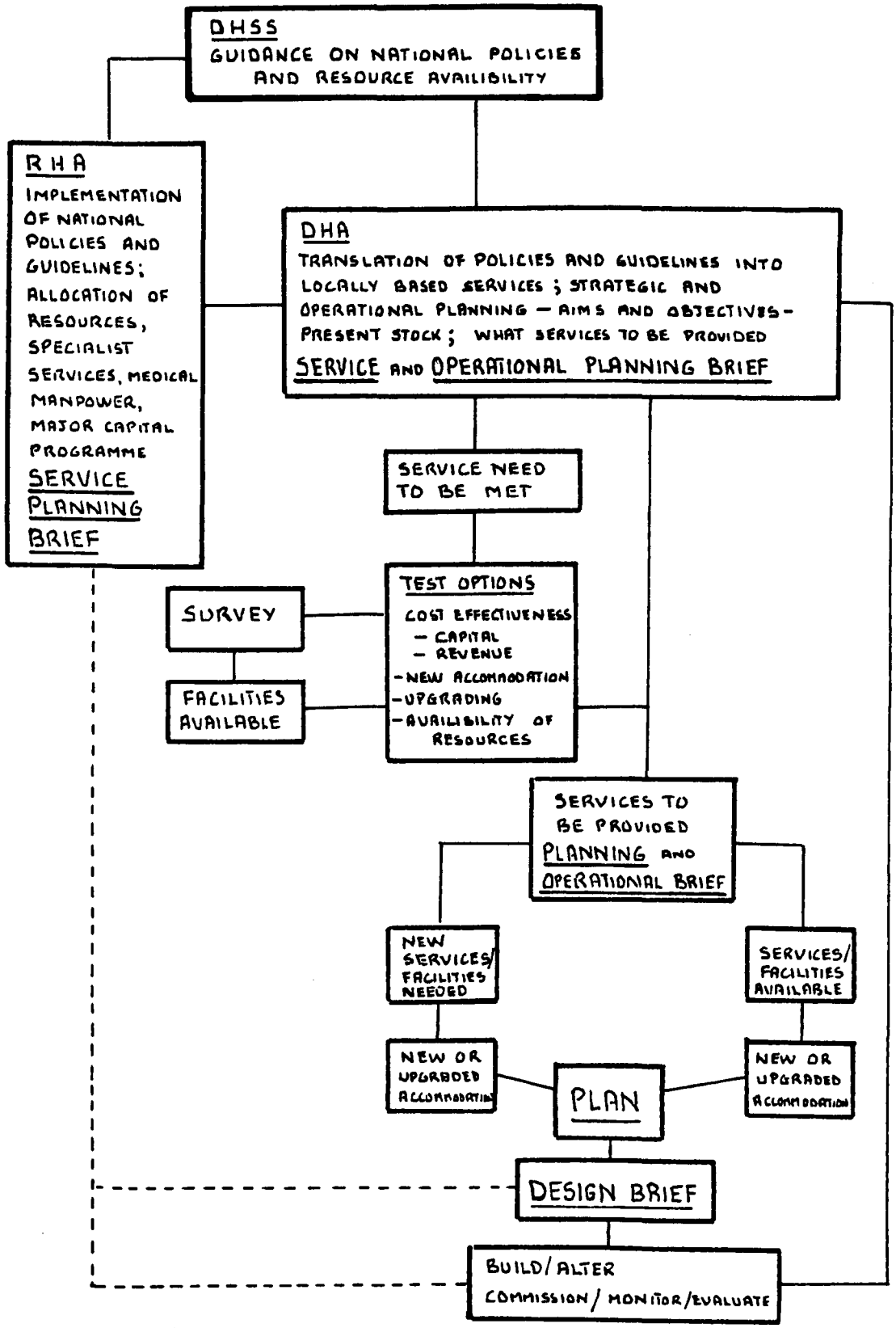

FIG 1
Examples of the stages of Service Planning at which a brief may be produced leading to the provision of accommodation.

which despite constant usage may have a totally different meaning to the various groups of people involved (Jenks, 1975).

This paper concentrates on briefing as applied to buildings and questions in what way is it so important. Is it the point at which design starts? Is it a once and for all process, or one which matches the design stage by stage? Is it just a means of conveying the client's instructions to the architect, an instrument of communication collecting information and evidence for a design project?

THE BRIEF

2.2 Definition

There is no neat definition of 'brief' which adequately describes the process and/or the product. The Oxford English dictionary defines a 'brief' as a '... short statement or account of something that is, or might be fully treated!' In simplistic terms it could be added that it is no more than the application of common sense to decide what is to be done before actually starting to do it. The preparation of a brief requires a review of what the problem is all about before attempting to produce solutions (Cox, 1968).

In terms of describing an architectural brief it is difficult to find any definitive source of reference. The Royal Institute of British Architects (RIBA, 1965) referred in rather generalistic terms to the brief,

> ...'Design of buildings depends on information, both general and specific, assembled for the purpose and providing the circumstances and requirements which, for convenience, is referred to as the brief!

The RIBA Handbook regarded the brief as consisting of the client's brief, consideration of statutory requirements, site conditions, economic appraisal, identification of standards reference to previous solutions and experience. There appeared an emphasis on the brief being directed towards specific and individual building requirements, aiming to solve problems of design at an early inception stage, concentrating on such factors as economic feasibility, building constraints, and drawing on past experience as an aid to the designer in producing sketch plans for client approval. It is perhaps significant that the Handbook set out a plan of work which described twelve operational stages of design, of which the brief is associated only with the first two stages of 'inception' and 'feasibility'. (Fig 2)

Following the 1965 edition of the Handbook, Green et al (1966) were of the opinion that because of the somewhat unusual organisation of work required to carry out a hospital

Stage	Purpose of work and Decisions to be reached	Tasks to be done	People directly involved	Usual Terminology
A. Inception	To prepare general outline of requirements and plan future action.	Set up client organisation for briefing. Consider requirements, appoint architect.	All client interests, architect.	**Briefing**
B. Feasibility	To provide the client with an appraisal and recommendation in order that he may determine the form in which the project is to proceed, ensuring that it is feasible, functionally, technically and financially.	Carry out studies of user requirements, site conditions, planning, design, and cost, etc., as necessary to reach decisions.	Clients' representatives, architects, engineers, and QS according to nature of project.	
C. Outline Proposals	To determine general approach to layout, design and construction in order to obtain authoritative approval of the client on the outline proposals and accompanying report.	Develop the brief further. Carry out studies on user requirements, technical problems, planning, design and costs, as necessary to reach decisions.	All client interests, architects, engineers, QS and specialists as required.	**Sketch Plans**
D. Scheme Design	To complete the brief and decide on particular proposals, including planning arrangement appearance, constructional method, outline specification, and cost, and to obtain all approvals.	Final development of the brief, full design of the project by architect, preliminary design by engineers, preparation of cost plan and full explanatory report. Submission of proposals for all approvals.	All client interests, architects, engineers, QS and specialists and all statutory and other approving authorities.	
Brief should not be modified after this point.				
E. Detail Design	To obtain final decision on every matter related to design, specification, construction and cost	Full design of every part and component of the building by collaboration of all concerned. Complete cost checking of designs.	Architects, QS, engineers and specialists, contractor (if appointed).	**Working Drawings**
Any further change in location, size, shape, or cost after this time will result in abortive work.				
F. Production Information	To prepare production information and make final detailed decisions to carry out work.	Preparation of final production information i.e. drawings, schedules and specifications.	Architects, engineers and specialists, contractor (if appointed).	
G. Bills of Quantities	To prepare and complete all information and arrangements for obtaining tender.	Preparation of Bills of Quantities and tender documents.	Architects, QS, contractor (if appointed).	
H. Tender Action	Action as recommended in NJCC *Code of Procedure for Single Stage Selective Tendering* 1977.*	Action as recommended in NJCC *Code of Procedure for Single Stage Selective Tendering* 1977.*	Architects, QS, engineers, contractor, client.	
J. Project Planning	To enable the contractor to programme the work in accordance with contract conditions; brief site inspectorate; and make arrangements to commence work on site.	Action in accordance with *The Management of Building Contracts** and Diagram 9.	Contractor sub-contractors.	**Site Operations**
K. Operations on Site	To follow plans through to practical completion of the building.	Action in accordance with *The Management of Building Contracts** and Diagram 10.	Architects, engineers, contractors sub-contractors, QS, client.	
L. Completion	To hand over the building to the client for occupation, remedy any defects, settle the final account, and complete all work in accordance with the contract.	Action in accordance with *The Management of Building Contracts** and Diagram 11.	Architects, engineers, contractor, QS, client.	
M. Feed-Back	To analyse the management, construction and performance of the project	Analysis of job records. Inspections of completed building. Studies of building in use.	Architect engineers, QS contractor, client.	

*The publications *Code of Procedure for Single Stage Selective Tendering* (NJCC 1977) and *Management of Building Contracts* (NJCC 1970) are published by RIBA Publications Ltd for the NJCC.

FIG 2
Outline plan of work (RIBA Handbook, 1980)

project from inception to detailed design stage, the RIBA procedure needed some modifications. There was a requirement for a system of information retrieval to enable various aspects of design to be followed through from stage to stage. They suggested the use of check lists or questionnaires which,

> '...have been compiled as the result of previous briefing and design expertise and can provide a useful medium of communication between users and designers.'

A revised edition of the Handbook published in 1980 was more helpful, and identified procedures which, if undertaken at the briefing stage can contribute to a successful design. For the first time the value of user requirement studies was noted, and although the general statement on the brief was repeated from the 1965 edition there was a recognition that,

> '... like the process of design the formulation of the brief for a project is a developing process, the stages of its compilation must match the design stages so that the level of information which goes into it, proceeds in the same way from the general to the particular to the exact'. (RIBA, 1980)

This statement might be regarded as rather overambitious although the Handbook noted the series of cyclic interactions

which take place, for as the brief grows it provides material for design studies increasingly, and these in turn effect the brief and call for more information studies. It was now acknowledged that compilation of the brief extended into four stages rather than two, namely Inception, Feasibility, Outline proposals and Scheme Design. At this point, stage D the brief should not be modified further and becomes 'frozen' through the remaining stages.

The development of the brief was not to be regarded as a personal statement, but needed to be as objective as possible. It is a major component of the design process and if the information contained is inaccurate or incomplete, wrongly interpreted and understood, or given the bias to meet pre-conceived ideas, misunderstandings may ensue and the quality of design will suffer. The handbook urged the importance that from start to finish the preparation of a brief is done in 'an objective, systematic, well ordered and understandable way'.

The Handbook discussed the principles of user requirement studies as a contribution to the brief and defined them as the process of identifying purpose, in terms of activities and human needs, for a projected building, and analysing their effect upon its design. A user requirement study was identified as a procedure for getting adequate briefing information, particularly when user needs are changing rapidly and getting more complex. (Fig 3)

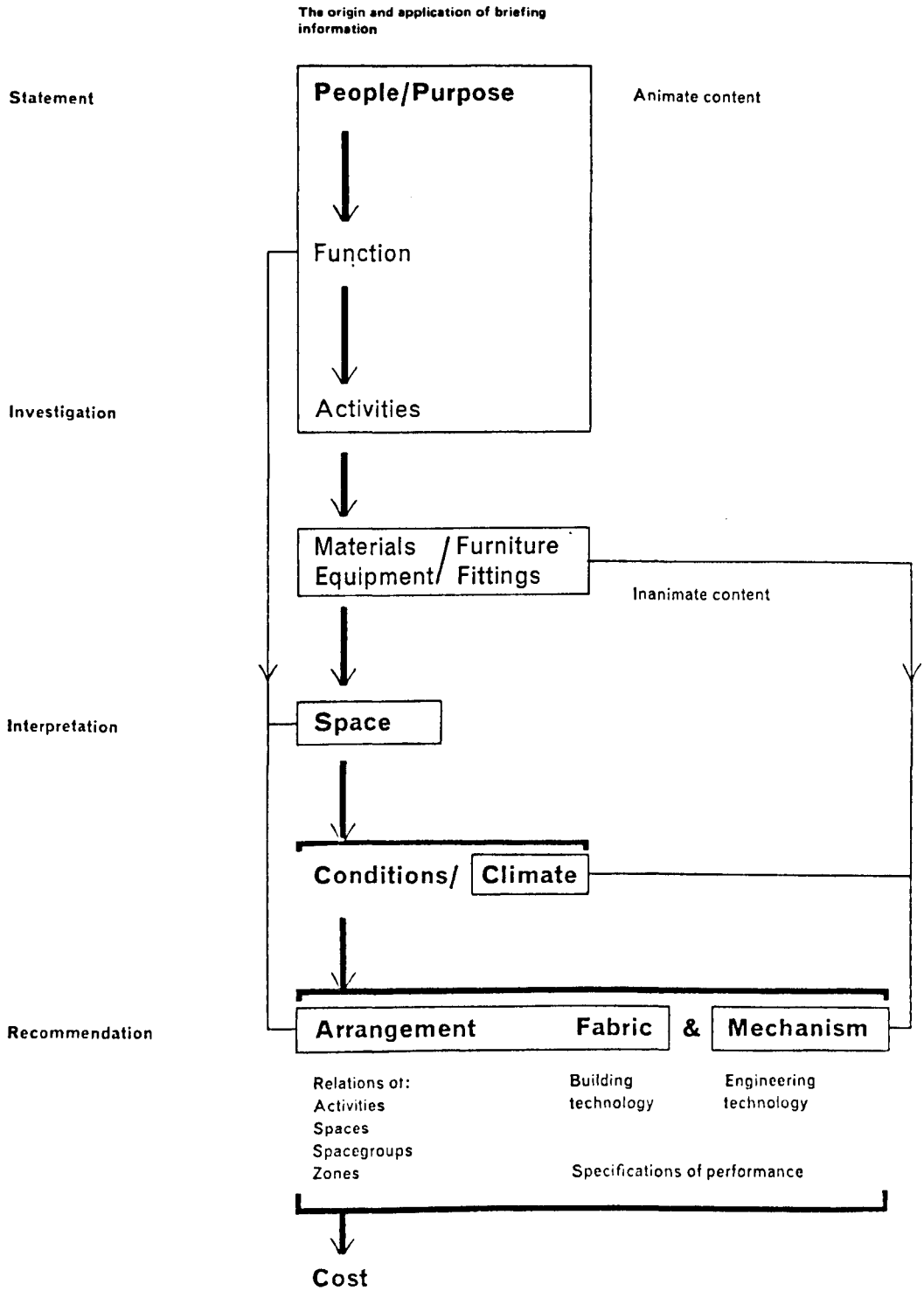

FIG 3
Design: User requirement study (RIBA Handbook ,1980)

Although more attention was given to briefing procedures, no exemplar or outline of a typical brief was given and the reader is still left not fully understanding what a brief consists of. Certainly there was now recognition that a brief cannot be regarded as a once and for all time task - just a list of imperitive requirements to be followed exactly. Such an approach can stiffle innovation which otherwise might with advantage influence objectives. It can also debase the relationship between the 'problem setters' and 'problem solvers' (Cox, 1968). This was emphasised by the Ministry of Public Building and Works (MOPBW) in their guide 'Preparing to Build' which recognised that the briefing stage of a building involves the making by the client of a great many interdependent decisions,

> 'It must overlap the design stage because some of the issues calling for decisions do not arise until the designer has explored alternative solutions to the main problems set by his client's requirements'. (MOPBW, 1965)

Other authors (Cox, 1968; Calindo, 1975; Green, 1975 Carrington, 1979) have attempted to define the brief in different ways regarding it as a declaration of intent, which formulates objectives and constraints in terms of which it is proposed that the design should proceed. Most are agreed that the brief should provide inspiration and purpose behind the design, and spell out such factors as the essential

operational aspects, management, economic and constructional policies as related to the conception of the design objectives.

Calindo (1975) defined the brief as:

> '... the document where the decisions for operation and design should be stated in order to determine for the project that pattern of organisation and design which will provide optimum service with the available resources of staff and finance'.

Green (1975) described briefing as the name given to the process of collecting information and evidence for a design project. He regarded briefs as documents which collect together the various bits of information produced in the process of discussing requirements and possibilities.

Carrington (1979) considered that the brief should be a document written in a form understandable to all involved in the planning and operation of a building.

> '... It should analyse the problem to be tackled, define the philosophy, in terms of design implications, and all the component parts of the building right down to the detailed physical requirements of every room or space, indoors or out.'

Treagus (1962) referring to briefing regarded it as the most important stage of all.

> '... If mistakes are made at this stage; if information given is inadequate or inadequately stated; if interpretation of instructions is incorrect or unbalanced, then much time and money will be lost'.

This was echoed by McCutcheon (1965) and Jefford (1967) who considered that from the client/user point of view the brief was the most important and biggest single creative act in the design of any project.

These comments support the view that a brief should be prepared jointly by the problem setters (client/users) and problem solvers (designers) who need to establish common agreement regarding not only what is desirable but realisable. For as Cox (1968) stated the brief making process and design should be regarded,

> ...'as partners in the continuing process of working towards a solution that is a synthesis rather than a compromise between ends and means.

This active collaboration between client/user and designer and the need for a clear and consistant brief formed the theme of a number of papers published in the 1960s and early 1970s. (Gates, 1971, MOPBW, 1965, Austin Smith, 1962,

Calindo, 1975). Both Gates and Calindo regarded the brief not only as an instrument of communication, but also as a means of conveying adequate instructions to define the clients require-ments. Not all designers would give unqualified support to the use of the term 'instructions' which if applied in the strictest sense could inhibit innovative approach to design, as stated by Cox (1968), and also by Oddie (1961) who considered that,

> 'The architect who hopes to design a successful building regards his brief as of fundamental importance in the same way as the clinician who hopes to reach a correct diagnosis regards the patient's history'

Leslie (1961) was certain that the design of a hospital could be no better than the standard of the brief given to the architect, but recognised the innovative role of the designer when he stated,

> '... we should remember that no building of any quality was ever planned by a committee and that the architects job is to be planning adviser to the committee whose principal job is to decide the schedules of accommodation, and to channel information to the architect...'

Even in 1981, at a Symposium on Briefing at the Building Research Establishment (Department of the Environment, 1981),

there was still a plan for the active involvement of the client/user and designer in preparation of the brief. The report, which was circulated only to participants in the Symposium recorded that,

> 'There was a great deal of discussion, although little agreement, about who is responsible for the briefing process. One architect argued that it was the architects responsibility - he had the inescapable responsibility of asking the right questions as his job was to meet the client's real need and not just his perceived requirements. The architects traditional role of passively "taking the client's instructions" was not good enough today and that he should be initiating more positive action. Another architect and a client argued that the responsibility was shared because there are areas of each activity which the other does not understand'.

However even in the 1960s there were a few client users who regarded the brief as something more than just a compilation of rooms. Sommerville (1961) was quite clear about this when he stated,

> '... From a clear and precise statement of people, process and organisation emerges the brief; it should be noted that this is much more than a schedule of accommodation'.

and Crawford (1972) said,

> '... The functional brief specifies what people will do - not what space and facilities they want'.

This was expanded also as recently as the mid-1970s by Ingham (1976) who regarded any building only as good as its brief; he pleaded,

> 'What designers need to know are the activities, the philosophy, the people, the equipment behind a requirement. Not just to be given cold room schedules and asked to get on with it'.

The formulation of the brief is therefore perhaps the most critical period in the relationship between the client/user and the designer (National Joint Consultative committee, 1973, Prodgers, 1967). It needs to be a document which is understandable to all involved in the planning and operation of a building (Carrington, 1979). It maybe argued that innumerable buildings have been designed and built successfully, with or without comprehensive briefs, equally many of these are deficient in functional content despite their architectural ingenuity. But a brief in a bureacracy is often more than just a means to design, it is also a link to many other things. The absence of a brief can create long lasting problems for the planning and management of the organisation. The nature and content of a brief will be discussed later in this work.

2.3 Who is the client

Identification of the problem solvers who contribute to the creation and execution of the brief is relatively straightforward. They include designers or works professionals such as architects, engineers, quantity surveyors and other specialists who interpret the clients requirements into specific proposals, prepare instructions for the contractors and generally make the decisions needed to carry out the project. The problem setter or client is a much more ambiguous term which can be variously interpreted. In the Concise Oxford Dictionary 'the client is defined as 'A person using the services of a professional man (lawyer, architect, social worker); a customer. Chambers Students Dictionary considers the term to mean 'one who employs a lawyer or professional man; dependent; customer'. The Dictionary of Building (Penguin) is more precise by defining client as 'The person or organisation by whom the builder or consultant is employed, to whom he is responsible and from whom he draws his fees..' This was expounded in Preparing to Build, (MOPBW, 1965) a handbook published by the Ministry of Public Building and Works:

> 'The client is the party who commissions the building, and may be a private individual in need of a building for his own or his family's personal use, an enterprise requiring premises for commercial or industrial purposes

or an institution or agency of government - local, regional or central - building for some public use.'

2.3.1 The Individual Client

The individual person who requests an architect to design and build for his personal use can clearly be identified as the client and user in a true sense. He or she is the potential user and the architect has a direct planning relationship with a client who can be quite specific regarding user requirements, commissioning the building and paying the bills. For the man who pays the piper calls the tune! The client in this instance may not be sufficiently technically experienced to prepare a detailed brief, but can discuss his requirements as a basis for the agreed brief. The two alternative approaches of brief making were described by Green (1973) who said

> 'In one case the 'client' presents the designer with a description of what he wants and tells him 'to get on with it'. In the other the designer takes the initiative and probes the users needs, subsequently putting forward ideas to be tested against the stated requirements'

This individual as a client has considerable advantages because the extent to which it is necessary for him to consult on the content of the brief is limited, usually no further than within his own family.

Provided he accepts the financial implication it is quite possible to introduce variations in the building to suit his own needs. The end result is generally a building which is adequate and satisfies the clients needs at the time of commissioning. Without an agreed brief this would be unlikely.

2.3.2 The Corporate Client

The small commercial or industrial project may still involve a single client, for example one man requiring a small shop or factory premises. But normally the client is 'corporate' where commercial, industrial organisations or agencies of government are involved. In large organisations a list of different, often conflicting and potentially divergent interests may be represented. Each has decision-making arrangements considered appropriate to normal functions but these may not be appropriate to client function in a building process (MOPBW, 1965).

Ideally, a corporate body involved in a building project may be able to resolve itself into a simplified or individual client for that purpose. Sole responsibility for dealing with the designer and builder can be entrusted to one man, or alternatively to a building committee or planning team where authority in the organisations is proportional between executives officials or committees.

In commerce or industry generally it is the client who wants, and uses the building, and pays for it. The client, who may be an individual or corporate body is concerned mainly that the building is commercially and economically viable. The brief must clearly identify the functional requirements and specify those aspects which require flexibility in the design solution to accommodate future changes in use, for example to accommodate changes in industrial production. During preparation of the brief there may be some 'proxy user' representation but often this is limited to 'experts' who advise the client of requirements from the user point of view. The actual user is rarely consulted, the needs of production or organisational aspects take precedence. However, legislation enacted in Scandinavian countries is changing this because the law there now insists that plans for new hospitals are discussed with everybody who is likely to work in them.

This situation can be further complicated in agencies of government where financial and management accountability may be vested in different levels of a hierarchy. For example, when the National Health Service (NHS) was reorganised in 1974 (Parliament, 1973) five tiers of 'management' could be identified; Parliament, the Department of Health and Social Security (DHSS), Regional Health Authority (RHA), Area Health Authority (AHA) and Health District.

It could be argued that Parliament which represents the nation and ultimately pays the Bills, is the actual client, and that all other levels of management are agents of Parliament. This line of argument follows the view that Parliament achieves what it wants through the Secretary of State for Health and Social services via ministerial policies which are instituted by the DHSS; the Permanent Secretary at the DHSS is personally accountable for the use of resources in the NHS. This view assumes the RHAs are agents of the Secretary of State and through the DHSS are accountable for the management of health services in their region. Similarly the AHAs are regarded as agents of the RHAs and the District Health Authorities accountable to the AHAs. This argument is conceivable in terms of the allocation and management of financial resources, for through its agencies Parliament attempts to achieve an even provision of health services through the United Kingdom. Parliament knows what the nation can afford to spend and applies building cost allowances which aim to provide generally an overall even standard, balancing national levels of provision with individual local needs.

In large building schemes the RHA (agent) manages the overall planning and financial control within cost limits and cash limits set by the DHSS. Before the second reorganisation of the NHS in 1982 (Parliament 1980) the AHA participated in the planning of large schemes and would be the agent responsible for commissioning of the building and controlling the revenue

allocated by the region for its subsequent operators. Below certain cost ceilings the AHAs were given delegated responsibility for the planning and management of small building schemes. Before April 1982 the health district management team (who represented the users of many disciplines) participated to some extent in the planning and was responsible for making the completed building work. With the 1982 NHS reorganisation (Parliament 1980) and the abolition of AHAs, the new District Health Authorities (DHAs) will generally assume the role and accountability vested in the previous AHAs and Health Districts.

The converse view is that the RHA is the client because within certain Ministerial policy constraints, the RHA is responsible for the ultimate financial control of building schemes in the region. The RHA employs the building contractor and consultants, and pays the fees. This relates very well to the three definitions of client starting on page 28. If the client is regarded as being much higher in the hierachial tree, then effective control of building schemes may become too remote from reality. With delegation of small schemes in the future to DHAs, then the same argument can apply at this level also ie the DHA can be described as 'the client' for the purpose of the small scheme which it manages directly out of centrally provided financial allocations.

The legal status which supports the view that the RHA (formerly RHB) is usually the client is embodied in the NHS Act (1946). Chapter 81, Part 11, 13 (1) which states that,

'A Regional Hospital Board and the Board of Governors of a teaching hospital shall not withstanding that they are exercising functions on behalf of the Minister, and a Hospital Management Committee shall, not withstanding that they may be exercising functions on behalf of the Regional Hospital Board, be entitled to enforce any rights acquired, and shall be liable in respect of any liability incurred (including liabilites in tort), in the exercise of these functions, in all respects as if the Board or Committee were acting as a principal, and all proceedings for the enforcement of such rights or liabilities shall be brought by or against the Board or Committee in their own name.'

Despite both of these opposing views it could further be argued that the real clients were the hospital users, staff and patients, and that the representatives on a project team merely a 'proxy client (Fairley 1965). This view was expressed in a World Health Organisation (WHO) report (Moss, 1977) on the Planning Teams and Planning Organisations Machinery. The report stated that,

'... multi professional planning teams have on them other people who may be regarded as 'proxy' clients whose job it is to represent the views of all classes of hospital users, with whom they are in touch continually, and who are, at the same time aware of the designers problems. In short the planning team is in an ideal

position to communicate three ways; with those who want hospitals (the clients); with those who pay for them (government or corporate bodies); and with those who design and build them (design firms, employed consultants)'.

For the purpose of describing the user input to briefing and accepting that the term 'client' may be dependent on a number of management situations, generally the term 'client/user' will be adopted in this work. Where it is quite clear that user requirements in the brief are being referred to, then either user or proxy user will be applied as appropriate.

In health service planning, multiple interests inevitably need to be considered. These range from those of the hospital staff (particularly staff directly involved in the care and treatment of patients - doctors, nurses, and paramedical professionals), the health authorities (who are responsible for the planning and management and financing of the service), through to the reason and purpose of it all - the patient. In practice the corporate responsibility for client input to planning almost always is devolved to the project team who represent the professional users and management, and presumably the patient who despite his importance rarely has any direct representation to protect his interests. For obvious reasons it is not possible to speak to <u>every</u> patient and as Moss (1977) pointed out recent

research has indicated that interviews with patients do not produce really useful planning data. He considered that as the planning teams were all potential patients, the combined knowledge and experience of the team of doctors, nurses, administrators and design trained collaborators could represent the patients needs.

Although not directly comparable with the complexities of health service planning an interesting situation arises in the mass housing building industry where the 'client' changes as the project progresses. Initially the builder or site developer acts as client, commissioning an architect to produce designs based on a brief which he considers a potential user or purchaser may accept, and which from a commercial aspect are reasonable attractive and potentially saleable. Some changes to the design as it is being built may be possible, but the ultimate client or purchaser is generally restricted to matters of a minor nature involving selection of finishes or provision of fitments. In the main this is not a serious drawback as the brief by a proxy user is quite acceptable. A good deal is known about housing - we all live in a dwelling of some kind - and market research provides a wide range of information on the aspirations and needs of potential householders. But as the ultimate user is not generally involved in preparing the original brief, he tends to shop around to try and select a property which is nearest to his personal requirements and which would have formed the basis of an individually prepared brief. This may

prove difficult particularly during a housing shortage, when availability of houses may be restricted to one or two identical designs provided in endless rows on housing estates.

That in itself is not disastrous if some adjustments can be made to satisfy the needs of the user and the standard design is sufficiently flexible to accommodate future alterations or extensions. A good example of this is the rows of Georgian properties developed in the 18th and 19th centures, (Summerson, 1962) which today are very suited to alternative use, eg residential or commercial accommodation after alterations or re-furbishing.

But even the Georgian properties were not entirely uniform. In his Biography of Thomas Cubitt, Hobhouse (1971) described the development of Tavistock Square in London in the following terms,

> 'The different takers of houses in the terrace can still be clearly identified by the patterns of railings and, where they have survived, of fan lights. Thus Framptons houses at the North end have railings with upright balusters, others have the fashionable double bow railings, while Astleys houses in the middle have another pattern of upright railings, and Framptons block at the end have another pattern of balcony railings found on Cubitts' houses with square open balusters.

> This demonstrates very clearly how, even with an estate particular about design details, a developer of standing and a fashionable architect, the customer was allowed considerable say over details of designs in the 1820s, in a way unthinkable in the 1840s, when sophisticated architectural taste applauded the design of Lewis Cubbitt's Lowndes Square Terrace (Surveyor, Engineer and Architect, 1841) because the individual houses had been merged in the whole'. (Figs 4-7)

However, in some mass housing schemes, in terms of satisfying user requirements the brief falls short considerably. Often the site developer has to build to a price and it is the user who is forced to accept a design solution which is very much a compromise with his ideal needs. Indeed the question may be posed whether such an approach of creating standard housing and circumventing client user briefs is a solution which is acceptable for the freedom of the individual. Although the short comings of briefing will be explained later it is appropriate at this point to mention briefing and standard design solutions in the form of mass housing.

Harbraken in 1972 suggesting the development of support structures as an alternative to mass housing, stated that the problem was not new. He mentioned Berlage (1918), who commented on the conflict of proposals for standardised housing to solve a post-war housing shortage,

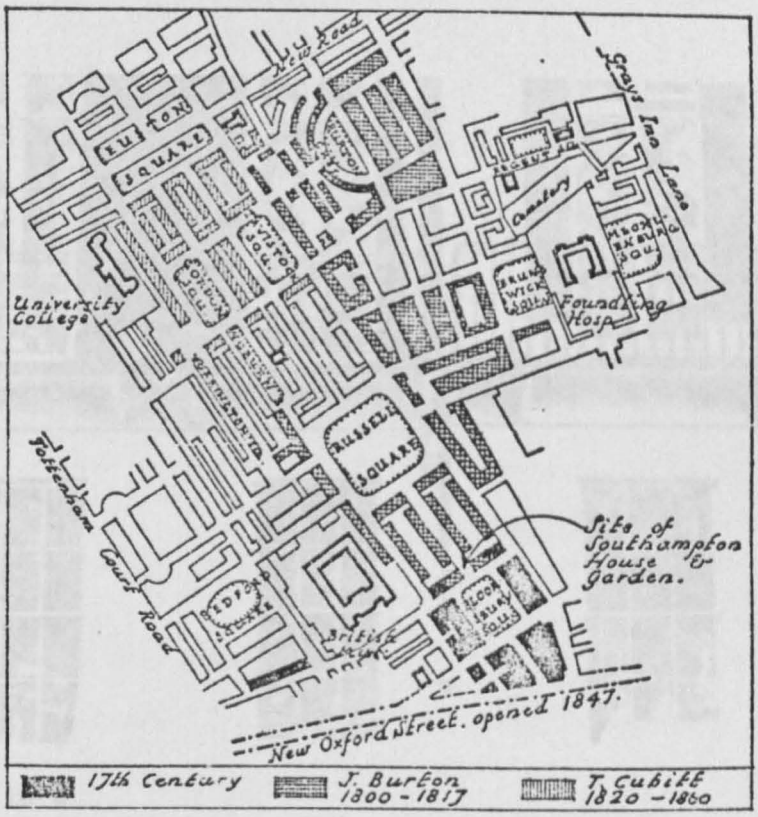

FIG 4
Sketch map of Bloomsbury showing the areas developed by Cubitt. (Georgian London, Summerson, 1962)

FIG 5
Cubitt Designs - Tavistock Square.(Thomas Cubitt, Master Builder, Hobhouse, 1971)

FIG 6
Detail of balcony rails - Cubitt houses, Tavistock Square, (1982)

FIG 7
Cubitt's Lowndes Square designs (Thomas Cubitt, Master Builder, Hobhouse, 1971)

... 'The conclusion must be that the return of the consultation and involvement on the part of the users, in the most literal sense must be accepted. ... By accepting the involvement and initiative of the user as a starting point of contemporary housing, we may begin to see a way out of the constraints in which we operate. Both the technological and human sides of the housing problem can acquire new perspectives.'

In other words a way must be found to involve users in the preparation of the brief if individual needs and aspirations are to be realised.

The provision of a large number of dwellings' on one site can be seen as one project, similarly the briefing for designs of a large number of dwellings become a single problem and is an approach which at first sight appears the obvious solution. Starting with the assumption that a town or community is no more than an architectural brief which only requires that people are to be shelterd, there seems no reason to leave its design to several instances. Why bother with the user? Despite that mass housing, where on the one hand large numbers are waiting to be housed, and on the other experts are struggling with the problem how best to effect this, in many ways harbours dangers. It occured to Harbraken that:

'The workers - and this is the essence of the matter - see in the dreadful monotony of endless rows of identical houses and bungalows an assault on their personality, upon their freedom, upon their humanity, this kind of housing turns one into a herd animal, a snob, a dependant, and this is understandable. For after the long period of guardianship and distribution systems imposed on them from above, they fear that they will again be cut off from any say and initiative which they had slowly gained in the manner of their dwelling. And now this proposed form of housing which has already drastically been characterised in a revolutionary organ as "one uniform, one fodder, one kennel" means to them being stacked away in some sort of cellular prison.'

Harbraken considered there was still a conflict between the method which from the professional point of view appears best, and the instinctive reaction against it on the part of the user. It still concerns the way in which people shall be housed as much as a housing shortage which at present as in Berlage's day demands a solution. He questioned why this apparent conflict has lasted so long and whether the fact that a conflict exists between man and the method chosen to combat the half century old housing shortage means that there is a connection between man and method. Harbraken referred to the method as being mass housing to which the resistence of the users are the denial of involvement and initiative to the habitant. He stated that,

'... in a good housing process the craftsman should act as craftsman, the architect as designer, the technician as technician, the user as user, and that it is from the meeting of all these complimentary actions that the dwelling and the town must result'

Again a plea for consultation and involvement of the user in determining the brief!

Harbraken, philosophised a good deal on the unsuitability of mass housing and suggested an alternative may be to provide 'support structures' consisting of a permanent framework which are not themselves dwellings or even buildings, but capable of lifting dwellings above the ground,

'constructions which contain individual dwellings as a bookcase contains books which can be removed and replaced separately; constructions which take over the task of the ground, which provide building ground up in the air, and are permanent like streets.'

He intended that such support structures would avoid the need for dwellings to be uniform. Individual occupants would select a prefabricated dwelling which would be assembled according to their requirements and financial means. This dwelling could be slotted into an appropriate position in the support structure or removed, and would enable an arrangement of different dwelling types to proceed freely. The addition

and adaptation of small shops and spaces or areas for commercial use would require no artifical planning, but may be included in direct response to requirements and the active interest of occupants in their environment would return along with individual responsibility. The money invested in support structures would be well spent for it would be unnecessary for authorities to re build them. Construction of dwellings to a large extent could take place independently of the weather and technical experiments, as well as experiments in the field of dwellings could be carried out incidentally.

Harbraken postulates that such a solution would re-establish the client user involvement in briefing, by giving a choice in determining individual requirements for housing. Certainly it would be a step forward in this direction and become one way of modifying imposed uniformity. This need is borne out when observing what individuals achieve in present mass housing situations. The superficial addition of improvements after purchase such as alternative paintwork, porches car parks, decorative iron work, custom designed double glazing, etc.

Whether Harbraken's support structures are a valid alternative to mass housing is debatable. The economics of high initial investment may preclude the proposal. But the sheer size and extent of the support structures in a total town development may in itself recreate a feeling of mass

housing. The individually selected dwellings slotted into the structure may appear so varied as to result in a fragmented, unco-ordinated whole.

Explaining the 'erosion of human habitat' in their book 'Community and Privacy', Chermayeff and Alexander (1963) concluded that there was a failure on the part of architects to respond to the real needs of client users through a brief. They recognised that man is fully capable of solving problems and of creating environments that could help reshape humanity for the better. The stumbling block was a lack of recognition of the dominant circumstances of the present urban culture and how it affects man. They suggested that a fresh look at the problem was essential and that the designer,

> '... must recognise that the diverse pieces of civilised main habitat - cities, towns, constellations, clusters, streets, arteries, parks, squares, houses, appartments, dwellings, shelters - call them what you will - have become obsolete. We believe that any further attempt to design in the conventional way, without a careful look at the problem, and the help of some defensible basic principle, will do little more than add another set of shapes to the growing catalogue of architectural millinery'. (Chermayeff and Alexander, 1963).

The approach concentrated on the hypothesis that privacy was a prime factor in dwellings, both internally in separating the various family functions, and externally in relation to other dwellings, communal and circulation areas. Even in the mass housing situation privacy could be successfully achieved. A suitable solution was recommended which consisted of a number of standard designs to meet this aim, but it was recognised that alternative choices must be available within the context of overall planning. It was considered that the aspirations and needs of the individual user could be satisfied even though he was not involved in the original brief.

2.4 Client responsibility

It has been stated that a building is only functionally as good as its brief. (Ingham, 1976). Equally the brief is only as good as the amount of effort the client/user and designer are prepared to put into its preparation. (Department of the Environment, 1981) This view was supported by Vandiver (1972) who stated,

> '... the only person who is fully capable of identifying his particular goals and requirements is the user himself, and that the product of creative interaction between users and the architect will be the common

understanding necessary to produce not only buildings that are more responsive to the need of their occupants but also better architecture'.

The appointment of a project team does not necessarily guarantee an adequate, well considered multi-user input to planning. Although the architects and engineers involved are usually conversant with the intricacies of planning, their expertise in hospitals may be lacking. The 'proxy users' even though highly qualified in their own professional field may virtually be amateurs in the 'planning game' and removed from practice by a number of years. Indeed it may be their first and only involvement in a project of any magnitude. Recognition of this deficiency in expertise supports the provision of suitable planning guidance, including the use of briefing data and 'planning aids' such as check lists for formulating operational policies. The form and extent to which these are helpful will depend on the size of project and the experience of the user and designers. (Architects Journal, 1966)

There are varying views regarding the role of clients in planning. Commenting on the whole process of briefing and design, Green (1973) suggested that it depended on three factors,

1. The amount of time available.

2. The amount of information already available in relation to what must be obtained to meet the maximum required standards of performance.

3. The availability of suitable people to provide, obtain, process and use the information.

The National Economic Development Office (NEDO) (1975), recognising the strong association between clear client identification and clear briefing stated that it is the responsibility of the client/user representative to see that all the parameters of a project are set out at the earliest possible stage. NEDO considered it important that the brief was well prepared by the client/user particularly for large, complex or novel projects. Their case studies had shown that this client function was all too often un-recognised or poorly executed.

The proxy user certainly cannot carry out his responsibilities unless he has the necessary experience and organises himself to do it (Prodgers, 1967). At a Building Research Establishment Symposium on Briefing (Department of the Environment, 1981) discussing the area of client/user skills, one architect commented that all client/users are inexperienced in briefing (unless it forms part of their own skill) and tend to lack a knowledge of what the cost of architecture consists of. Project teams need considerable self discipline to achieve an orderly programme in

preparation of the brief. There is the need for formal minutes - recording the decisions made and the reasons behind the decisions (Adams and Cammock, 1970[I]). If discussions are to be fruitful and waste of time avoided then they must be structured on an agreed pattern (Adams and Cammock, 1970[II], Cammock and Adams, 1970).

A truly representative multi professional planning or project team combines user and works professional groups (designers) into a balanced whole, with responsibility for preparing project policies and programmes (Moss, 1977).

There must be adequate user and designer representatives without creating an unwieldy committee, but Green et al (1966) pointed out that,

> '... It is tempting to increase membership of a briefing team so as to ensure that all potentially interested persons get a say, but in practice when too many people are involved it is difficult to work efficiently'.

This was also recognised by Graham (1961) who stated

> '... Planning committees begin by being too big - to placate all the interests that demand representation; they proliferate subcommittees. It is magnificently democratic but it is not planning. Even where the people on these committees are prepared to take an

enormous amount of time and trouble in the effort to contribute from their own experience, the experiences are too varied and have never been analysed and compared so that the exercise tends to become incoherent, inordinately time - consuming and frustrating for everybody.'

Graham's view is valid, but if the size of a project team is to be kept within reasonable bounds, then arrangements must exist to facilitate consultations between project team members and their professional colleagues. An appropriate solution is to use specialist planning sub-committees who consider detailed planning aspects which the full project team view and coordinate within the overall context of the project. (Fig 8) Works professional representation and continuity of membership on the project team is essential in such sub-committees. The users - nursing, medical, technical and other professional staff - are brought into the discussions and given the opportunity of offering the useful knowledge which they possess. (Oddie, 1961, Schafer, 1953) This was highlighted by Cooper (1965) who stated,

'... to write a detailed operational policy for a future hospital requires up-to-date knowledge, experience and techniques ...'

Cooper was probably referring to the need to take advice from users who were 'au fait' with up to date needs, as he felt

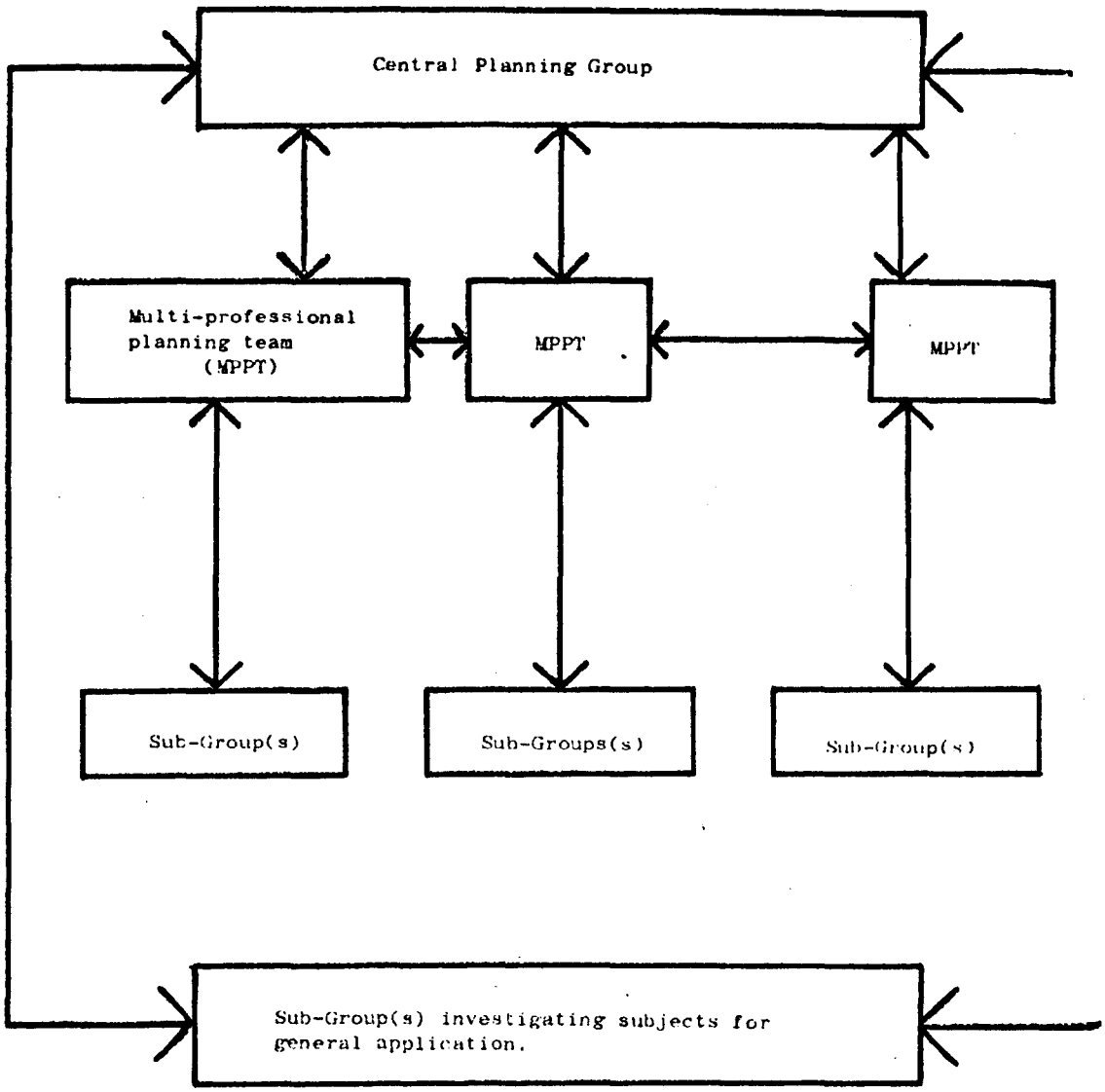

FIG 8
The role of subgroups in planning.(WHO: Approaches to Planning and Design of Health Care Facilities in Developing Areas, 1977)

that membership of a project team often included individuals whose duties were mainly administrative, and who could only devote a small fraction of their time to such a problem.

In project teams the client has a responsibility to avoid delays caused by endless discussions, argument and change of mind which will severely curtail the time left for productive work to the inevitable detriment of the project. One of the reasons offered for the enormous length of time taken to design medical buildings is that the medical profession and the architectural profession approach the problem in diametrically opposite directions. Austin Smith (1962) suggested that the architect's design process usually starts with broad and general ideas leading to particular and then exact ideas. He said that this process is not adhered to by the medical profession who tend to approach the problem by an initial concentration on minutiae.

Certainly the ultimate responsibility for briefing decisions rests with the client and often compromise is necessary to achieve them, but decisions must be produced by a project team when they are needed and these decisions adhered to. Compromise is perhaps the most difficult aspect for the client and this was recognised by the MOPBWD* (1965) in their publication 'Preparing to Build',

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* Ministry of Public Building and Works Directorate of Building Management.

'... Members (of project teams) must be prepared if necessary to make real concessions, sacrificing some part of the interests entrusted to them in order to prevent still more damaging delays. Where the building committee consists of people very experienced in their own fields, opinions tend to be firmly held and compromise is often difficult; small fact finding exercises are the only way to avoid or resolve such impasses'.

If a thorough and well considered brief is to be produced the user must be prepared to do his homework, and as mentioned previously, allocate sufficient time and effort to the process. Another factor is the illusion held by many client/users that architects are mind readers. Such an assumption will result in misunderstandings and dissatisfaction as the project progresses. This point was aptly made by Crawford (1972),

'Architects are professional solvers of a special sort of problem - just as doctors are in their field. Before an architect can solve the problems posed by a new building he must be quite clear about what the problem is. He has to be 'briefed', he has to extract information from his client - just as the doctor has to extract information from his patient in order to make his diagnosis. But clients can do a great deal more to help their architects in this information extraction process than a patient can do to help their

doctor. The client can, indeed must, do his homework. If he does not the architect will invent his own idea of what he thinks his client wants; he will then proceed to the best of his ability to find a solution to what may be the wrong problem altogther - a classic example of 'doing the wrong thing bloody well'.

3. BRIEF MAKING

3.1 Deficiencies

The design brief is an important two-way communication between the planning and design teams; the extent to which it is of value depends on whether it conveys an accurate understanding of client user requirements, and also whether the planning team have given adequate thought to the data assembled, the options available, the design considerations and cost implications.

The necessity for multi user involvement in briefing in the National Health Service (NHS) has already been mentioned. Before reorganisation of the NHS in 1974 the overall responsibility for planning was vested in 14 Regional Hospital Boards (RHB's).

Some of these adopted standard methods of preparing design briefs and managing building projects. But in general this was not a national practice, for each RHB was autonomous and at liberty to use their own methods of working, provided they operated within an overall financial accountability and some measure of building control for large schemes. Briefing methods used in the late 1950's and early 1960s, concentrated on departments or rooms as the units of enquiry. Check lists were used to study existing departments in a hospital and establish a basis for future requirements. There were disadvantages as Green et al (1966) pointed out for,

'... the method suffered from the inherent fault of merely trying to improve existing departmental organisation by improving space and environmental standards and traffic flow circulation'

By the mid 1960s, briefing methods, where they existed, tended to utilise room data sheets. These set out room requirements in detail, supplemented by general guidance and schedules of accommodation contained in Ministry of Health (MOH) Building Notes, which formed the basis of cost allowances, ie a cost ceiling set by the MOH within which a project of given functional content was generally to be contained.

In the 1960s little had been achieved nationally to rationalise the approach to design briefing. However, some studies were in progress, for example the Greenwich district hospital project, and an Activity Data Method (ADM), introduced by the Ministry of Public Building and Works (1966), (described in part 2 of this work) achieved a degree of acceptance. This ADM developed the idea of room data sheets but with the emphasis of recording user requirements to provide the designer with as complete a statement as possible of his clients' requirements before the design stage was reached.

It was claimed by the MOPBWD (1966) that the Activity Data Method aimed,

'... to be more fundamental and to record the activities which are to take place in the building. It does this by means of standard diagrams and data sheets, which form a compact document for use by all members of the design team. The document can be revised easily and further information added where necessary. ...'

However, perhaps the insularity of the NHS precluded general acceptance of the Activity Data method at that time.

Although more enlightened client users recognised that operational policies, or how a building is intended to work, were the foundation of a design brief, many briefs remained, and still remain deficient in setting out clearly and concisely the client user requirements. The result was that in many instances, buildings, which in operational terms did not satisfactorily meet the needs of the user, often needed costly contract variations during building or immediate post contract alterations before bringing into use.

This was highlighted by Gates (1971) who said,

'The need for planning changes during documentation, building alterations within a few months of occupation, or compromises in working methods upon initial occupation are often too readily explained as being the outcome of new developments since the work was

started... A more accurate answer is often that insufficient attention was given to the preparation of the brief.

Deficiencies in briefing might be attributed in some part to an emphasis on the use of 'schedules of accommodation'. This approach was encouraged and made routine by the use of MOH Building Notes which specified a schedule of accommodation, the room areas defined being directly associated with cost allowances. It was common practice to regard this schedule to be a requirement as of right and status, irrespective of whether the operational needs justified provision. More dangerous, this method of briefing took no account of the organisation of work which should be the basis of the brief, or the carrying out of that work which in time must be the basis of space allocation or the most effective way of utilising space and accommodation.

This was noted by Moss (1977), reviewing hospital design and the National Health Service, who stated,

'The formulation of a schedule of accommodation at an early stage of the project was seen to be of great importance. Since that time the early preparation of schedules has been questioned as being one factor which has inhibited a 'functional approach' to hospital design, contributed to a lack of understanding about hospital operations and obscured the relationship between operation and design'.

The result of this was in many instances an inadequate brief on which to develop the design. In the early 1960s Clifford (1962) held the view that,

> '... Architects quite rightly complain that the information they are given is vague and imprecise'.

at about the same time, Cooper (1965) pointed out that the amount of time and detail that went into the formulation of a brief varied considerably. He complained that,

> '... rarely it seems does the architect find sufficient information in them to know exactly how the client proposes to use the facilities to be provided.

A decade later case studies by the National Economic Development Office (NEDO) (1975) on briefing still showed,

> '... that this client function is all too often un-recognised or poorly executed. Even where a brief was provided by the client department, some proved to be more a vague statement of aims than a definition of physical and social needs in terms of functions, relationships, areas, environment, time-table and budget'.

A recognition that all was not well with briefing was confirmed by a study at Loughborough University by Trimble et al (1972) who found that briefing procedures were unsatisfactory in a number of ways,

> 'Firstly building performance requirements tended to be made known to designers in a sequence incompatible with the design sequence, caused late ammendments to designs or, if it were too late for amendments to be made, the performance of the building fell short of what it might have been'.

This was echoed by Dorta (1974) who highlighted inadequate briefs as consisting only of a schedule of accommodation prepared by unqualified personnel with insufficient time or resources,

> '... Result - buildings delivered late, inadequately commissioned and incapable of meaningful evaluation'

Shortcomings in the ultimate performance of a building may not be due entirely to inadequacy of the user input to the brief. Compromises during the building period, for example the substitution of components for commercial or technical reasons; inadequate production documentation which may result in variation of component fixing; change in statutory requirements such as fire regulations - all are possible factors which may contribute to user dissatisfaction. But in

many instances it is the initial statement which forms the client user input to the brief which does not provide adequate organisational data from which the space and equipment requirements can be derived and the design based. This incomplete brief in many instances, was lacking information which would be of considerable value for commissioning the building. In many instances the brief for a health building tends to be vague, both in format and content. This makes evaluation comparison between projects very difficult.

The situation since reorganisation of the NHS 1974 has changed very little, indeed Moss (1977) presented his findings of an assessment of the main methods used to give guidance on planning and design in the National Health Service (NHS). His original intention was to examine hospital design briefs in order to try to identify the information gaps which appeared to be complicating the work of design teams, but found that,

> 'At the time the original objectives were set it was considered that such a work might conjecture the essential contents of a design brief and from that, postulate a briefing method or model. In the event a search for and survey of design briefs revealed them to be either non-existent, particularly in the NHS period, or so patchy as to be virtually useless for comparative purposes'.

This was echoed by Green (1975), who noted that there was a bewildering variety of forms for briefs and found, for example, that there was little similarity in sequence or format for hospital development briefs in Australia.

Many other recent authors had similar view points. Calindo (1975) at that time noted,

> 'The existence of many different methods for briefing and the different definition of terms were the main problem in trying to define the brief and its characteristics'.

This was in spite of early methods such as the Activity Data method introduced by the Ministry of Public Building and Works.

In the same year Jenks (1975) thought 'brief' at best to be a vague term and wondered,

> '... whether the meaning is the same to all parties in the discussion or whether the perceptions of the brief are in fact totally different to the various groups of people involved:

Considering the importance of the briefing process and its effect on all stages of a project it is surprising that there

appears to be at present no universally accepted method of preparation. Later, a number of attempts which have been made to achieve this will be discussed, including various aids to briefing and a method of formulating the client user requirements for a design brief comprising a check list approach. Meanwhile it is appropriate to explore the content and format of a brief, and its relationship to design, commissioning and evaluation.

3.2 Content and Format

The important characteristics of a good design brief have been referred to in papers published over almost two decades. The Architects Journal (1966) published an article on hospital briefing practice and procedure. It stated,

> '... The objectives of the briefing process are to give design teams a clear idea of the functions for which the hospital building is to make provision and how in principle (in some cases in detail) it is to be designed. It may also be said that the objective is to give hospital users a clear idea of the design proposals.'

A few years later Gates (1971) noted that a properly considered and organised approach to the preparation of a brief will pay dividends, no matter how small a building project may be. He stated that,

'... a systematic examination of the needs will often surprise the user with the number and complexity of the requirements it will reveal; requirements vital to the success of the project which were not previously recognised, even by those most familiar with the operations.

Describing briefing for hospital buildings in Australia, Rivers (1972) assumed that a medical or surgical brief would have already been prepared. The planning team would then draw up a brief which would be the lynch-pin of the whole project. Rivers regarded the brief as being the clients' careful, detailed and specific instruction to the architect on which the detailed design should be based described two sets of brief in sorts,

'... 1. <u>The performance brief</u> - This sets out in principle, the building and service functions with their working relationships; it describes the performance requirements of the building and largely leaves it to the architect to decide the manner by which the required performance is satisfied.

2. <u>The specific brief</u> - This describes in careful detail the whole proposal; room sizes heights etc .....'

Another Australian author, Fletcher (1979), considered that brief information should comprise of,

'a MANAGEMENT control plan covering the project planning up to the start of construction a STATEMENT of operational policies governing the working of the hospital and its department a DRAFT development control plan showing the relationships of departments one to another and the main lines of communication for each department indicating room areas and highlighting critical layouts, sizes and engineering service requirements. Where alternative solutions to accommodation requirements exist, these should be noted for consideration in the design'.

Finally, four years previously, Green (1975) considered that the aim of the briefing process in designing, is to assemble evidence on the functional or operational requirements, so as to,

> '...produce a form of building which will allow the functional requirements to be met in an optimal manner'.

Assuming the written form is being considered, there are certain elements which should form the basic framework of any design brief. That the brief could emerge in concise and simple language could hardly be disputed (McCutcheon, 1965). Carrington (1979) considered that,

> '... It should analyse the problem to be tackled, define the philosophy of operation, and relate that philosophy

in terms of design implications, to all the component parts of the building right down to the detailed physical requirements of every room or space, indoors or out'.

But not all designers are convinced that detailed briefs are advantageous. Heath (1970) had similar views to Carrington (1979), he considered that a successful brief depended upon,

'... exhaustive and imaginative exploration of all the possibilities and the sifting of ideas for their worth and appropriateness, though in some quarters over-elaborate briefs are regarded not always giving the client what he wants'. As details tend to be out dated even before the project is complete, there is support for the plan as you build, build as you plan, school of thought, with a statement of broad principles as an essential element'.

This accorded with the views of Trimble et al (1972) at the University of Loughborough who considered that,

'... time spent on formulating detailed briefs was not felt to be justified by the gain experienced by designers or clients from such detail'.

Whether Heath and Trimble were justified in making such generalisations regarding detailed briefs is a matter of

opinion. They were perhaps tending to regard too much detail as restrictive to the design process rather than the prospect of early obsolescence of the subsequent design. Indeed there are dangers in regarding detailed information such as room activity data, as sacrosanct rather than information on which to base a more neutral design solution. Whilst these so-called 'instructive' elements of the brief should not be present a rigid predetermined solution, much is to be gained by ensuring that sufficient information is included. Gates (1971) emphasised that if the best possible solution is to be achieved,

> '... unnecessary restrictions imposed by the brief should be avoided, but it is equally important that it should be as thorough as possible, covering all the legitimate user requirements which could influence the design solution'.

Weeks (1973) was satisfied that by and large hospital designs are based on well understood briefs which results sometimes in sensitive design, but was convinced that the resultant buildings were generally doomed to obsolescence. He questioned the value of precise briefs which could create difficulties in large building projects constructed in stages over a period of years and stated that,

> '... Because this kind of building is not completed quickly its brief is bound to change while it is under

> construction. Precise briefs and designs are only appropriate, in fact, for the first stages of such a building's construction: later stages must be capable of being constructed to meet functional needs that will not be known until those stages are reached'...

Weeks' solution was a brief which produced a design for an indeterminate hospital which allowed expansion as the stages of the project progressed; for example, - Northwick Park Hospital and Clinical Reseach Centre.

Beddard (1961) referred to brief making and the possible obsession of project teams with space rather than function, and suggested that the brief should be confined to a description of function and procedures. He quoted Florence Nightingale who knew the meaning of functional planning when she wrote the following to Gulton, Inspector General of Fortifications in 1861 saying,

> 'Your draft does not define with sufficient precision the manner in which the meat is to get from the Commisariat to the soldiers' kettle, and the clothing from the Quarter-masters Store on to the soldiers' back'.

During the past two decades the majority of authors have recognised that the importance of function rather than space at the brief making stage emphasises the need for written

policies of operation. These are the essential content of the client input to a design brief, extending from whole hospital and departmental policy considerations to the operational aspects of individual spaces, in that order. As already mentioned, the finalised schedule of accommodation should emerge only when these aspects have been fully explored. Indeed, detailed consideration of operational policies and the potential for multi functional use of space can have an effect on the original outline schedule of accommodation produced for outline costing purposes at early stages of a project.

Many writers have highlighted the importance of operational policies and the brief. A leading article in the Architects Journal as early as 1966 stated,

> '... Before it is possible properly to consider a schedule of accommodation or the interrelationship of departments major policy decisions must be made on how a particular hospital will be organised and run'.

Two years previously Newell (1964) referring to operational policies said,

> '... At this early stage, the fundamental pattern of the hospital has to be borne in mind, and this will include how goods will reach the hospital, the arrangements needed for vehicles, stores and supply policies within

the hospital, methods of transporting materials within the hospital, details of mechanical services and traffic routes for patients, staff and visitors which must to some extent be segregated'.

Previous to this paper, Prodgers (1964) emphasised that the architect wanted not only a schedule of accommodation,

'... but also clear information about the processess and activities that are to go on in the building'.

It is evident therefore that in addition to specifying the service to be provided, and the workload and functional requirements on which the design is to be based, operational policy considerations form an essential element of an architectural brief. These policies should indicate the various differing modes of operation, which need to be catered for. They should be set out in terms which are clearly understood but not completely deterministic (Jefford, 1967; Beddard, 1961), and in writing rather than client produced graphical form (Austin Smith, 1962). There should be sufficient information to enable the design team to understand how the client proposes to use the building - its functional requirements, pattern of movement for patients, staff and supplies, and what standards will be observed. It will be of little value if the operational policies go no further than repeating the general considerations which form

the early sections in HBNs. (Cooper, 1965, Smith, 1965) However, highly detailed operational aspects do not form part of an architectural brief although these will need to be identified before staff are appointed or designated to run the new building at the commissioning stage of the project. (Smith, 1965) Then the limitations of what has been built, staff available and other aspects can be assessed.

The specification and selection of spatial requirements can follow only when the proposed method of operation has been determined and the use of space overtime agreed. The department or building being planned should be regarded as a system rather than a series of unrelated spaces or rooms.

Operational policies then set the scene for further detailed work. This was emphasised by Adams and Cammock (1970^{I}, 1970^{II}),

> '... It establishes the mood of the building - whether the atmosphere will be domestic or institutional, busy or peaceful. It establishes the quality - the 'social class' and 'prestige' aspects. It establishes priorities - such that the architect can apportion the money between the various building elements in his cost plan - and avoid conspicious waste (such as floor finishes requiring expensive cleaning equipment in a very small building). Most important of all it enables

the members of the planning team to understand each others attitudes and the reasons behind their decisions.'

Various methods of preparing operational policies have been devised but it is interesting to note that despite promulgation of these through published papers, none seem to have found universal acceptance.

Some operational policies produced by the client user employ a systematic approach, setting out progressively the mode of operations, and leading to detailed operational aspects related to specific room or spaces; these are the better methods. Other operational policies can consist simply of a narrative set out under various broad headings.

Another factor which may have discouraged general acceptance of the methods available, is the difference in terminology used compared with that adopted and understood by a particular client.

Both Adams and Cammock (1970) were precise in their evaluation of operational policies with statements such as,

'... The first group of operational policies sets the whole scene for future detailed work... Written policies for the operation and administration of the building form the essential basis of the briefing method ... the backbone (of this method) lies in formulating

and recording the policies which will constitute the brief ... and .... the policy statements are the client's final instructions to the architect telling him what to provide and why'.

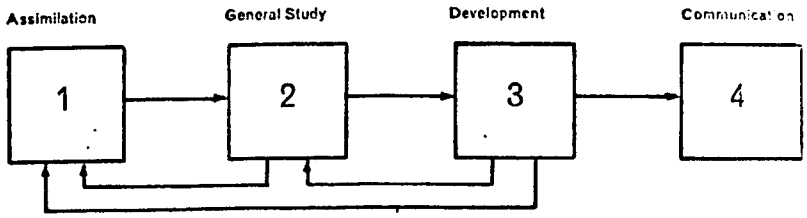
Adams and Cammock also considered that a standard format for architectural briefs should be adopted to make certain that the same ground would be covered and no items missed. Methods of achieving this by a check list approach, used in different ways, have been described by several authors. (Green, 1975, Jenks, 1975, Cowan and Goodman, 1960). Undoubtedly such methods (which will be explored in detail later) do lend themselves to the adoption of standard formats for architectural briefs and a saving of preparation time. (Dorta, 1974, Cowan and Goodman, 1960). However, it is important at this point to record that such methods must allow flexibility to incorporate individual project team variations, and whatever advantages are claimed for logical methods, the intuitive approach to design cannot be discounted. (Green, 1975)

Relationship to Design Process

The importance of defining function, organisation and operational policies at the outset of a building scheme has already been emphasised. Only when these have been identified can the design process begin to flow. (Fig 9) (Fairley, 1965, Mellem, 1961) However, preparation of a

In the simplest terms, the design process can be seen as a flow system, as in diagram A: a main progression with occasional feedback.

Diagram A



In practice, the mental activity tends to make short flashes from one phase to another according to results achieved and the ideas that are stimulated by the work.

Diagram B shows the sort of unpredictable jumps that are made within the major planned progress.

Diagram B

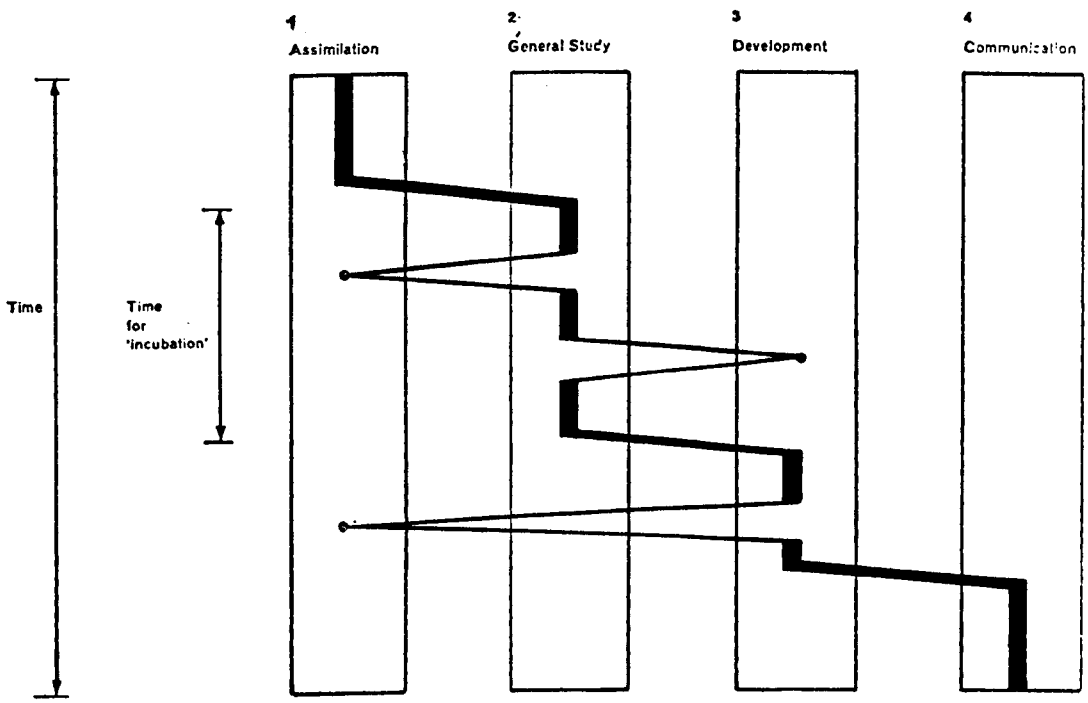


FIG 9
Design - The Process (RIBA Handbook, 1980)

brief is not a unique compartmentalised event, but a procedure very much dependent on interaction with the design process. (MOPBWD, 1965) It is essential that the designer participates in the 'brief making' at an early stage of planning. (Heath, 1970) Indeed, it may be appropriate that the designer contributes to this by probing user's needs (Green, 1973), for systematic co-ordinated briefing and design can go a long way towards solving problems involved with complex design such as health buildings. Jenks (1975) presented two extremes of opinion relating to this,

> '... on the one hand the RIBA view of a client orientated brief with decisions fixed at an early stage of design, on the other hand the view of a holistic approach of a process that is cyclical, covering the whole design process, but requiring fairly sophisticated management to operate.'

Jenks described the difference between the concept of a client brief given to the designers who then take it away, interpret, add to it and then design; compared with the concept of a briefing process which involves communication between client, users and designers with an evolving brief, investigating the problems which arise and designing in parallel with the evolving brief. Jenks saw this process commencing at inception of the scheme and ending perhaps by evaluating the building after it was brought into use.

Cox (1968) also supported the cyclical approach, regarding designers as essential partners in creating a brief, testing its strength and flexibility even when it is being born. Cox considered that,

> '... Brief making and design are partners in the continuing process of working towards a solution that it is a synthesis rather than a comprise between ends and means.'

Unsatisfactory design solutions can result from a lack of communication between 'briefers' and 'designers'. This may be due to attitudes of the client/user who may be inclined to dismiss his involvement in total construction planning, regarding the process as exclusively within the province of the architect - 'this is what he is being paid for'!' (Carroll, 1965) The lack of communication, and sometimes misunderstanding can also result from incompleteness of information - for example an inadequate insufficiently considered brief, which has already been mentioned in previous chapters. Graham (1961) regarded the most serious weakness in our planning as,

> '... The lack of collection and digestion of information about the requirements we are planning to meet. We start with very little in the way of data, reliable or precise, about the procedure and activities we are going to house. There is a mass of established practice, of

personal impressions and individual preferences. But when each of the principles concerned is if not wayward, at least fallible, and not only mortal, but superannuable, they are not going to take us so very far in the useful life of the new hospital.'

Although Graham pleaded for improved information techniques contributing to the design process, these alone will not improve the quality of architectural design for briefs alone cannot create good buildings. The creative process is the prerogative of the designers and there are good buildings in existence for which there was no brief. Honey (1969) suggested that very much depends on the architects skill in handling this information in the service of his conceptual skills.

Mitchell (1963) considered that time taken to prepare sketch plans could be reduced if the architect ensured he consulted with those people who knew the function of the building. If this were done then the final building would be more satisfactory with fewer design errors evident which once made were difficult to rectify. One particular aspect of the design process needs to be remembered. It is tempting for a design team to prepare working drawings based on the briefing and detailed design consultations, introducing changes found necessary during design but without consulting the users as to whether these changes are acceptable. Green (1973) warned of the pitfalls of this approach.

'... Changes may be proposed and made during construction to get over unforseen problems. These again need to be followed up and if necessary the operational system may require modification. Further changes may then have to be made to the building or equipment.'

Radford (1968) welcomed the development of standard briefs and designs following the working needs of hospitals, which made it possible to rationalise and develop a range of common briefs and designs for various hospital departments. He thought these could be used to add to an existing complex, to form part of a complete redevelopment scheme or the nucleus of a complete new project. Radford noted however, that a successful programme for the production of a range of standard and commonly applied briefs and designs depended on,

- an analysis and rationalisation of the planning policies for the hospital,
- setting down a range of policies suitable for the individual facilities or departments,
- evolving a series of development designs based on these policies,
- formulating a rationalised range of planning policies for the individual facilities or departments,

- defining the range of spaces commonly needed for these facilities and setting down the room data material,
- producing a series of designs for facilities or departments consistent with the development scheme.'

Moss (1977, 1978) also welcomed trends in standardisation of data at briefing and design stages as paying more dividends faster. Briefing and design is speeded up, progressive improvement is facilitated and so on. Moss referred particularly to the use of standard activity or room data being developed by the DHSS as a method of briefing (see page 149). But he warned that there were drawbacks as well as dividends in this approach when the data in inexperienced hands was married with other standardised data such as recommended room sizes and area cost ratios. Neither activity data nor any other method can design buildings - all the relevant information is important and activity data takes its place among the most useful base data available.

Standard designs evolving from standard briefs may not provide an acceptable solution for all potential users. The objections may be based on personal preferences and idiosyncrasy, nevertheless it is reasonable that before accepting a packaged solution a user must satisfy himself that the operational policies on which the standard brief is

based reflect the overall whole hospital planning policies for the total scheme. The standard briefs will require careful scrutiny by the project team to ensure these conditions are met, and if not, appropriate amendments made and the implications of these considered in relation to the standard design solution. A good example of this would be an assumption in the standard brief for a department that staff changing facilities are centralised. A whole hospital policy of decentralisation would require appropriate additional accommodation provided at departmental level.

Green (1973) suggested that standard solutions tended to inhibit progress. Referring to hospital designs being offered as 'off the peg' solutions he said,

> '... This may do away with briefing altogether in theory, but it would be an unwise client authority who did not at least do some preliminary examination to see if the 'off the peg' solution matched their particular problem. It rarely happens that it does .... The necessity to go through the same process each time a hospital is to be built does seem wasted. But the development of new ideas and better solutions to old problems depends largely on testing a variety of different approaches to the same problem.'

Although not directly relevant to this statement it is appropriate to record the view of Laurenson (1966) who pointed out

that no architect 'worth his salt' would design a building and then leave the administrator to fit in what is required. He needs to understand the intended operational policies. Using an off-the-peg solution without scrutinising the operational policies on which it is based can result in a similar situation.

It is important to appreciate the difference between standard design solutions and unique design solutions derived from standard space and component data. For reasons mentioned previously, the standard design solution may prove quite unpalatable to the innovative designer. On the other hand, provided that standard space and component data does not present itself as an imperative, rigid, preconceived solution with fixed shapes or sizes of spaces or rooms, then it can be helpful both to user and designer in contributing to an acceptable design solution. For the user it helps him to consider operational and functional aspects which otherwise he might have neglected. For the designer, provided the ergonomics on which the data is based is sound, much of the standard graphical information can save time in drafting, particularly in respect to the spatial implications of specific components and potential overlap of function. The designers skill enables interpretation of the basic standard data, modifying and manipulating it to achieve a solution appropriate to the project.

Success of the final design, which almost certainly will be a compromise solution balanced somewhere between the initial user requirements and the design constraints, is dependent not only on a clear and precise statement of people, processes and organisation - the brief, but also on the interaction and consultation between project and design teams. Such creative interaction between users and architect help to achieve the common understanding necessary to produce buildings that are 'more responsive to the needs of their occupants and also better architecture' (Vandiver, 1972)

Relationship to Commissioning and Evaluation

Commissioning is inevitably closely related to planning as it is concerned with putting into effect decisions taken, either explicitly or by implication at the planning stage. (Barker, 1968). Detailed operational systems need to be developed and, unless planning documentation is available the commissioning team may misunderstand the original operational intentions of the project.

That the brief forms a vital link between planning, commissioning and evaluation was recognised two decades ago, by Milne et al (1963) who stated,

> 'In addition to its function as a guide to the architect in designing the hospital, a written programme can serve

as a permanent record of the original planning and simplify the work in future operation. It can be used in orientating hospital administrative staff to the system of operation planned. It also furnishes a basic reference for selection of equipment that promotes the most efficient operation of the hospital, and for necessary continuing evaluation'.

This would appear to be a commonsense viewpoint, but regretably there are innumerable instances even recently (which will be described later) when this all important brief is either unavailable or presented as a incomplete incoherent collection of information, which is of limited value to the commissioning team or subsequent evaluation exercises.

Since 1963 a series of authors (Langslow, Kings Fund, Carrington, Howell) have pleaded the importance of the brief being available during commissioning and evaluation stages. Their papers have inferred that lip service has often been given to this need; the commissioners and evaluators being left to start from the beginning in the compilation of detailed operational policies or operational systems.

At a conference on hospital commissioning at the Scottish Hospital Centre, Brian Langslow (1967) pointed out that the seeds of smooth commissioning were sown during early planning and that one of the important aspects was the recording of operational policies,

'Plans were a reflection of policies but too often the commissioning team were left to seek out the operational policies which had produced the plans. Operational planning was often misunderstood, it was a continuing process of revision and refinement during which the briefing requirements and the design solutions interacted on each other. To record this was not to encourage inflexibility'.

The development of detailed operational systems from the brief was described in revisions of the document on commissioning published by the Kings Fund. (Kings Fund, 1975, 1981) It was pointed out that before a new hospital is designed the systems to be used are first planned in outline as operational policies which are then given to the architect as part of a brief. These are then developed in detail and should constitute the programme of future operational systems. (Fig 10)

Carrington (1979) has already been quoted on his views of the importance of adequate briefing during the design stage. Carrington also emphasised that the written brief should be a document in a form understandable to all involved, not only in the planning of the building but also in its operation. He recognised the importance of the link between various stages and that,

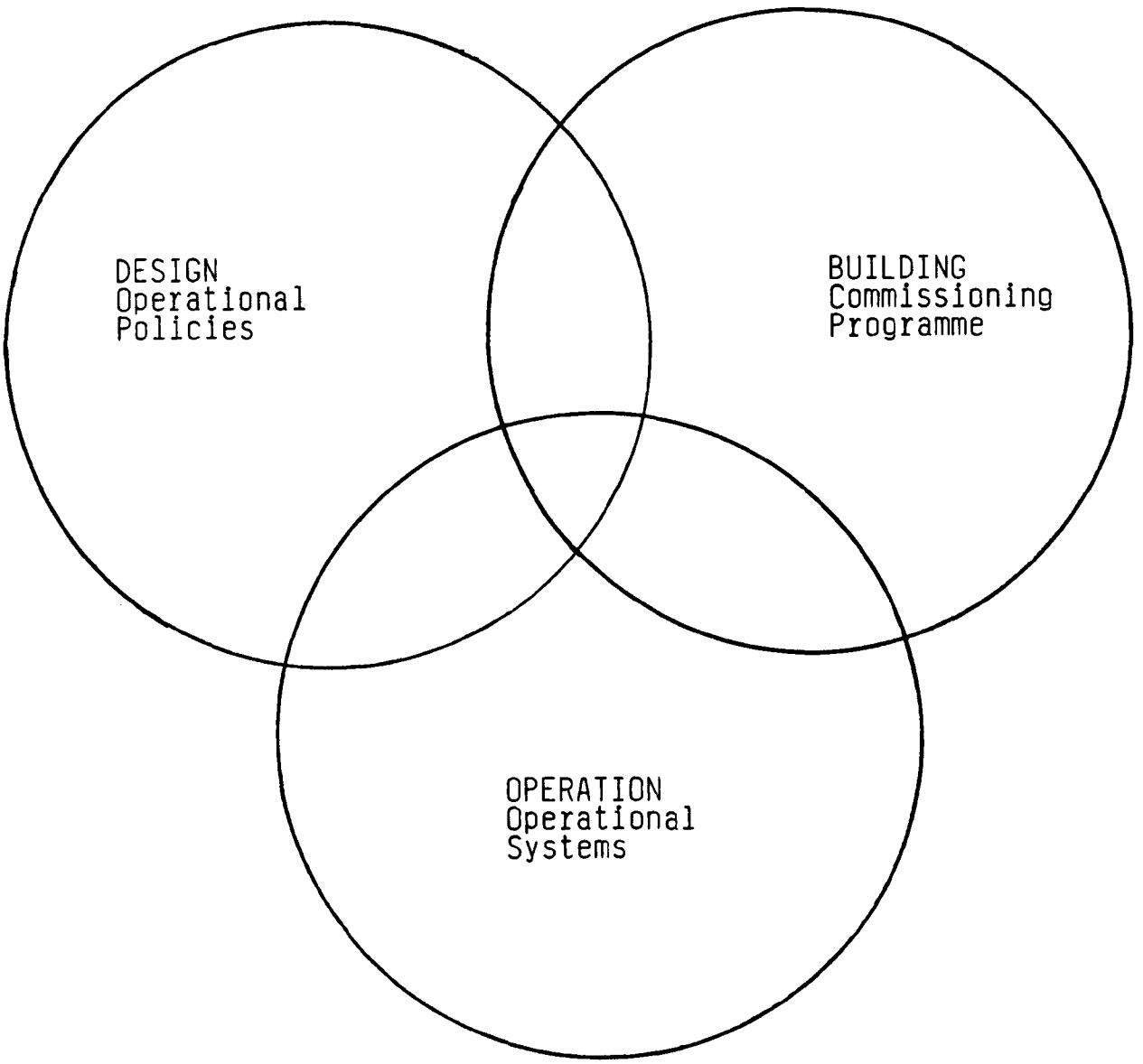


FIG 10
The Interaction of Operational Policies, Commissioning and Operational Systems (Commissioning Hospital Buildings, Kings Fund, 1975)

'..... There should be no breakdown of communication between planning, commissioning and operation.

..... The person appointed to run a building should be able to understand the philosophy behind the design, with adequate guidelines as to the proposal use and reasoning. This should aleviate response problems which are the result or ignorance.

..... A comprehensive design brief should be available to all concerned for even if people disagree with some of the contents, at least they know the reasons for the decisions'.

A year later, Howell (1981) undertaking a research project on commissioning for the DHSS, found that in many instances information on operational policies or planning decisions which are a vital aspect of commissioning was either inadequate or non existant. There were no whole hospital policies available in 5 of the 13 sample hospitals in his survey, either newly commissioned or about to be commissioned. In 3 hospitals departmental policies seemed non existant. Where such policies were available, much of the information was considered insufficient. A literature search, (Howell, 1980[I]) revealed only a small number of operational policies, the most useful work having been carried out by the Institute of Operational Research at Walsgrave Hospital, Coventry, and the Oxford Regional

Hospital Board in the 1960s; and more recently two notes of Good Practice No 8 and No 13 issued by the DHSS. (DHSS, 1978[I], 1978[II]) Howell considered the situation to be most unsatisfactory for,

> 'In view of the importance of the above documents for ensuring that the new facilities are commissioned to achieve the intended purpose of the scheme, the problem is a serious one. The inadequacy of such information may lead to policy decisions and procedural systems being adopted which are inappropriate to the intended design of the facility'.

Even if policies were available it would appear that their validity was in doubt. Outside of the survey, a senior hospital officer suggested that hospitals were being designed and decisions taken without the necessary policies having been agreed and confirmed originally.

Howell in his report listed a number of problems which relate to commissioning and which are associated with planning information such as operational policies and a brief,

> '- There is a need for information concerning original planned use and subsequent changes.

- The need for an efficient information system concerning the planned use of a facility becomes more critical the longer the time period between the design stage and the service commissioning stage.

- Project team minutes are available for this purpose if the original project team has been disbanded. However, the standard and efficiency of minute taking can vary considerably leaving unanswered questions.

- Officers involved in the original project teams decisions will not be available to fill the missing information needs.' (Howell, 1981)

In 1967 Langslow had complained of the inavailability of written policies. It is interesting to note that 8 years later in 1975 he considered the problem still present.

'..... it must be said that many commissioning teams (service) have begun their work needing to find out what operational policies were implicity in the design because nobody had written them down.'

Howell (1981) found instances of this deficiency for a number of the officers included in the survey indicated that they

were unable to obtain the original policies around which the hospital was designed and also subsequent changes to the original planned policies.

Just as the commissioning team need to base the development of operational systems on the original operational policies, so effective evaluation needs access to information about the original planning decisions. The absence of a written brief creates difficulties, for evaluators need to make a clear statement about how the building fulfils the brief given to its designers. As a first step it is necessary to establish whether the activities of the users are being carried out in the way intended at the time when the brief was drawn up. Baynes in the Kings Fund document Evaluating Hospital Buildings (Kings Fund, 1969) emphasised the importance of this basic factual information which offered the key to evaluating a number of possibilities which were involved,

> 'If the building is not being used according to the brief is this because,
>
> - the users do not know the original concept
>
> - the users needs have changed (which may indicate errors in the brief)

- the designer did not fulfil the brief (which may indicate errors in the design activity that went on after briefing, or may indicate errors in the brief)

- the designer improved on the brief (and improvements are being realised in practice)

If the building is being used according to the brief, this fact still needs relating to the positive and negative observations already made on the site. These questions may be asked,

- was the brief itself adequate?

- did the designer fulfil the brief adequately?'

In the same document there were indications that the availability and content of briefs would improve as a result of new systematic methods being introduced by the DHSS. A letter from W G Cannon, the then House of Governor at Addenbrookes Hospital, suggested that the confusion which made evaluation very difficult should begin to disappear. He was referring to the introduction of the CAPRICODE procedures in hospital planning in which planning teams were required to record the principles behind their detailed decisions, and work to a stage-by-stage procedure for approval and

subsequent completion of an NHS building project. (Appendix 2) Cannon thought that in the future it would be easier to trace back the thread of information and argument that led to the adaption of particular forms of planning, design and construction. Indeed CAPRICODE does specify that a brief should be formulated at Stage 3 and gives general indications of what the brief should contain. It does not however, set out detailed guidance in this respect, and the content, detail and format adopted depend very much on the competence of individual project teams.

The Kings Fund document (1975) summarised the sources from which the evaluation process could draw information.

'Planning documents: These will probably have to be gathered from a variety of sources. An effort should be made to trace the planning decisions back as far as possible so as to show how, say, national economic problems have had a direct effect on the cost limits of a particular building project... Policy documents: These should reveal the intended use of the building. In them it should be possible to identify which operational policies have had a decisive effect on the design. For example, the use of a waitress service for meals; the introduction of progressive patient care. Identifying the policies will also allow the evaluation to check how they are carried out in practice. Once again, the minutes of the project team will be a good source of information...' (Kings Fund, 1975)

The ultimate sentence could be regarded as wishful thinking. Most project team minutes are so voluminious and unstructured as to be of limited value as a source document for commissioning and evaluation. Policy documents either singly or as part of a brief are often incomplete and similarly of little help in future stages of a project.

The absence or incompleteness of original operational policy statements can seriously hamper effective evaluation. In addition to being an important pre-requisite to the design process, they provide a yardstick against which the design can be judged during planning, and form an essential part of any comparison between a building and others of its kind. Only if they exist in precise detail can evaluators decide whether they are comparing different buildings designed for similar functions or similar buildings trying to serve different functions.

4. SUMMARY OF CONCLUSIONS

The design brief is an important link between planning, design, commissioning and evaluation. The importance of operational policies as the foundation of a design brief has been stressed in most papers published since the 1960s. Despite this, briefs have often been deficient in setting out clearly and concisely the user requirements, which in many instances has resulted in buildings which do not satisfy functional requirements, often needing costly contract variations or post-contract work to rectify the inadequacies.

Shortcomings in the ultimate performance of a building may be due to compromises during the building period, but in many instances it is the original brief which can create misunderstanding and does not provide adequate organisational data upon which a design can be based and commissioning of the building accomplished. In the National Health Service, although some Regional Health authorities may adopt their own standard format for design briefs, in most instances the brief for each health building tends to be unique both in format and content. This makes evaluation comparison between projects very difficult. Frequently briefs consist only of a schedule of accommodation prepared by unqualified personnel with insufficient time or resources the result being buildings delivered late, inadequately commissioned and incapable of meaningful evaluation.

Scrutiny of literature on planning reveals that brief making should never be regarded as a once and for all time task - specifying a list of imperative requirements to be followed to the letter. Brief making and design are 'partners in the continuing process of working towards a solution that is a synthesis rather than a compromise between ends and means'. Active collaboration between client/user and designer and the need for a clear and consistent brief formed the theme of papers published in the 1960s and early 1970s. It was considered important to ensure that a functional brief specified first what people will do - operational policies - rather than space and facilities they want - schedules of accommodation. The brief should avoid unnecessary restrictions but should be as thorough as possible covering all legitimate user requirements which could influence the design solution.

Although various methods of preparing operational policies have been devised none seem to have found universal acceptance. There is at present no standard method for preparing a design brief.

In preparing the brief, communications and liaison in the project team, 'thinking through' collectively, agreeing objectives, resolving conflicts, and so on can create a problem area of primary importance. The manipulation of technical data and producing design solutions are secondary, in the sense that solutions to them are dependent on making progress in the primary area. It was noted that clients, 'users', and designers, often do not have the knowledge, experience, skills, and attitudes to enable them to cope, as a team, with this problem area, and that something should be done to help them.

Multi user input to planning is important and the user cannot carry out his responsibilities unless he organises himself to do it. Project teams need considerable self discipline to achieve an orderly programme in the preparation of the brief. The client/ user has a responsibility to avoid delays caused by endless discussions, argument and changes of mind which will severely curtail the time left for productive work to the inevitable detriment of the project. The user must not have illusions that architects are mind readers. He must be prepared to do his home work and allocate sufficient time and effort to the process of producing a brief. If he does not, the architect will invent his own idea of what he thinks the user wants.

Preparation of a brief is not a unique compartmentalised event but a procedure very much dependent on interaction with the design process. Systematic, co-ordinated briefing and design can go a long way towards solving problems involved with complex design such as health buildings. Unsatisfactory design solutions can result from a lack of communication between 'briefers' and 'designers'.

Standardisation of data at briefing and design stages, particularly activity or room data, speeded up the process although there were drawbacks when the data in inexperienced hands was married to data such as recommended room sizes and area cost ratios. Standard designs evolving from standard briefs may not provide an acceptable solution for all potential users. A

standard brief requires scrutiny by the user to ensure that the operational policies on which it is based reflect the overall whole hospital planning policies for the total building scheme. This is in fact the same process as creating it in the first place - there is no less responsibility.

A commissioning team requires access to the original planning policies in order to develop the detailed operational systems. If these are not available there may be misunderstandings regarding the original operational intentions of the project. There are innumerable instances even recently when the brief was either unavailable or presented as an incomplete, incoherent collection of information, which is of limited value to the commissioning team or subsequent evaluation exercises. All too often the commissioning teams are left to seek out the operational policies on which the plans were based; in many instance nobody had bothered to write these down.

The absence of a written brief has created difficulties for evaluators who need to make a clear statement about how the building fulfils the brief given to its designers, and whether the activities of the users are being carried out in the way intended at the time when the brief was drawn up.

It was surmised that the implementation of CAPRICODE in 1970, which required planning teams to record the principles behind their decisions, would make it easier to trace back the thread of information and argument that lead to the adoption of particular

forms of planning. Although CAPRICODE (Appendix 2) specified that a brief should be formulated at stage 3, it did not set out detailed guidance on the content of the brief which depend very much on the competence of individual project teams.

Although project team minutes should be available to provide information on policy decisions, most are so voluminous and unstructured as to be of limited value as a source document for commissioning and evaluation. (Howell, 1981) The availability of project documentation leaves a good deal to be desired. Although it may be argued that unnumerable buildings have been designed and built successfully, with or without comprehensive design briefs, equally many of these are deficient in functional content despite their architectural ingenuity. This is evident particularly in some hospitals planned in the 1960s and commissioned during the 1970s. Notable examples of these are some new teaching hospitals which present an imposing facade and lavish facilities in the entrance, but unacceptable design in patient and clinical areas. Here utility rooms and toilet facilities may be ergonomically inadequate, and the observation of patients from a staff base difficult if not almost impossible.

PART 2

Have briefing methods improved?

The first part of this work explored the importance of the user input to a design brief. It was argued that there is ample evidence to show that briefs are deficient in many instances and may not even describe adequately outline operational policies, often because user requirements are not set out clearly and concisely even when the information exists. Although no common format exists for the presentation of a brief, the availability of planning guidance such as Building Notes, Technical Memoranda and the systems approach embodying Activity Data has increased considerably during the last two decades, and it might be assumed that this would have resulted in improvements in the briefing process. This does not appear to have taken place, indeed it has been suggested that the opposite prevails and that the type of guidance which has emerged has tended to stifle innovation in design. Moss (1977) stated that there is,

> '... anecdotal evidence to suggest that the more competent architects in the NHS feel suffocated by the amount and nature of officially produced guidance and resentful of the influence that it puts into the hands of people not considered by them to be genuinely contributing members of the project team.'

Moss was also very critical regarding solution orientated guidance which,

> '... puts the designer at a disadvantage in the multi-professional planning team in that he finds himself under suspicion when suggesting some design or organisational change for improvement which is "not in the book".'

Furthermore, Moss appeared to express doubts in the development of guidance which encouraged a change from the traditional methods of working to,

> '... a systems approach with its piles of paper, a rule for everything, and check and re check' (which) 'has affected adversely the role of designers... Traditional professional boundaries are shifting enormously quickly; with their new systemised data doctors and nurses are playing designer - without any knowledge of design theory or the pitfalls of linear decision making - and nobody knows where they are. And architects feel under pressure to re-establish themselves as "leaders" of the design team without knowing exactly how!

There are several points in this statement which can either be challenged or merit comment. Regarding the systems approach which started in the late 1960s with the

introduction of CUBITH*, it is true there is a tendency for paperwork to proliferate. However, those who are involved in the development of systems are, or should be conscious of such disadvantages. An example of an attempt to simplify systems management is a recent plan by the DHSS to bring together data sheets for common (frequently used) activity spaces or rooms into a separate document (and thereby avoid the need to include the detail of each in every new Health Building Note). It is often inefficient management arrangements or bureaucratic processes which result in the proliferation of paper. The decision for example, that every member of a project teams should be provided with a copy of every piece of paper generated by the project.

Moss is quite correct that professional boundaries have shifted enormously quickly. This results from the development of multi-professional co-operation in planning teams, which is strengthened by blurring the edges of professional boundaries and weaving together the skills of individual professions into a new profession of 'planner', who inevitably acquire a knowledge of design theory and decision making. It could be considered that in many instances these skills are developed 'on the job' and may not necessarily equate with a complete understanding of planning.

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* Co-ordinated Use of Building Industrial Technology for Health Programmes

This was acknowledged both by Moss and a committee who investigated the education and training needs of health facility planners (Moss, 1979, Health Services Planning and Research Steering Committee, 1973)

If the doctors and nurses are having acquired design guidance and systemised design data now accused of playing designer, it would not be unreasonable to suggest that previously designers could have been accused of playing client. Such a situation may have been occasioned by lack of adequate client briefing or a designer may have been faced with a client who, through lack of experience, was unable to understand the detailed implications of a design solution to his requirements. Little wonder the designer (who may or may not have acquired expertise in hospital design) found himself forced to make assumptions and take decisions regarding the operational intentions of the project.

It will be recalled that Moss was also concerned regarding the need for designers to become re-established as leaders of the design team. Certainly there is no dispute in respect to the leadership of the design team and in the majority of situations it is the architect who fulfils this role. However, leadership of the planning (project) teams is another matter. Whilst the overall co-ordination of the teams may be vested in a Chairman from one of the management or planning disciplines, selected for his ability and expertise, the leadership input changes emphasis as the

project progresses. At first during outline considerations and formulation of operational policies, the client input predominates, although architectural and 'works professional' involvement is of vital importance. At later stages of the project the emphasis moves towards the works professional input and the client input diminishes.

Even with planning experise, acquired from the evolution of the multi-disciplinary approach to planning and the availability of guidance in various forms, during the last two decades many planning teams seem unable to organise themselves to formulate a comprehensive, well thought-out design brief. Various items of guidance can be identified individually as briefing data, whether being Health Building Notes or systemised activity space or room data, but what is missing is a method of linking all this information to ensure that client user requirements are set out clearly and concisely. The second part of this work discusses some previous attempts to formulate systems to prepare design briefs.

Systems

Lao Tse a chinese philosopher in the 6th century BC is reputed to have said that the reason for having a system in common use should be beneficial by enabling business to be transacted in an orderly and understandable way between the parties involved. Many attempts have been made to establish

such an approach to hospital planning; an agreed set of hospital planning procedures is now a recognised feature adopted by national, regional and district health authorities both in the United Kingdom and abroad. One such set of procedures, CAPRICODE (Appendix 1) mentioned previously, enables United Kingdom regional and district health authorities to know what the national (state) authority expects from them in feasibility studies, appraisal of options, functional content, estimated costs and control of building projects. They understand the kind of information they are required to produce and the various stages through which a building project must progress. This enables the authority to plan its work accordingly. These and other similar procedures are generally non-specific in the way which briefing data should be assembled and consequently result in planning submissions of varying standard and content. They are not systems of briefing but systems of procedure.

The danger of any system is that it may become the master and not the servant. Green (1974) considered that a system should be capable of coping with change, for,

> '... If it has to be continually modified to make it work, or to keep up-to-date with changing circumstances, it is time to think of abandoning it. No system can be produced overnight and be expected to work perfectly. The planning procedures which have been found to be most

useful have been the result of much detailed study and gradual improvement. But they should not be unduly complex if they are to be under-stood and used easily, and do all that is required ...'

It could be argued that a total system of planning can prove too rigid and inhibit innovatory approaches to design. The essence of a practical easy-to-use system is the way in which it can be adopted or modified to meet change and the needs of a particular project (DHSS, 1970), providing a framework which enables logical, systematic consideration of options which constitute an input to briefing and design. It is important that a successful system encompasses the total range of decision making from the broad policy considerations to detailed room data. The shortcomings of systems attempted so far can be attributed to a number of factors including complexity in use, a reliance on a particular group of experienced planners dedicated to making the system work, or concentration on one aspect of briefing with little or no direct relationship to the total requirements. Even so, there has been some success with systems particularly those utilising room data, such as the activity data method (ADM) developed by the Ministry of Public Building and Works (1966) and the Activity Data Base introduced by the Department of Health and Social Security (1976). Similar methods form the basis of other systems which have been tried, and although some purported to encompass organisational and operational aspects the emphasis remained on briefing data which is mainly orientated to rooms or activity spaces.

When arguing whether briefing methods have improved it would seem appropriate to consider first, one which has been used as a basis for research into new design concepts, (ie testing a design hypothesis) followed by some which have led to, or are almost entirely concerned with activity space data, where operational policies are clearly defined beforehand. A method which is supposed to cover operational aspects of briefing, will then be discussed followed in Part 3 of this work by the description of a proposed more simplified approach to the solution.

The Greenwich Project

In June 1962 the South East Metropolitan Regional Hospital Board agreed to co-operate in the Ministry of Health's (MOH) third research and development project for which St Alfege's Hospital, Greenwich was selected. The aims of the project were ,

> 'To redevelop a whole hospital on an existing and restricted hospital site while maintaining a full service from the old buildings; to have modular planning so as to make use of repetitive and standardised items, and to provide an efficient and reliable service for patients and visitors in a safe environment (Green et al, 1971)'

The experience gained in the planning and design of the first MOH redevelopment projects (a hospital out patient department

and accident centre at Walton Hospital, Liverpool, (Heathfield, 1967, Hospital Management, 1968) and a hospital kitchen, restaurant and stores building at Kingston Hospital, Surrey) indicated that there would be considerable advantages in undertaking a whole hospital project. There was the need to test out briefing, planning and design methods by studying, as a complete system, such questions as the effect of layout on efficiency, the cost implications of various forms of supply and distribution, and certain possible layouts and shapes for hospitals which were being considered in theory only, from the viewpoint of integrating engineering services into the building structure, and of providing for growth and flexibility.

The total concept of Greenwich has been fully documented elsewhere (Green et al, 1975 Moss, 1975). Discussion will be confined therefore to an outline of the research on which the project was based and its relationship to briefing. The Greenwich project was seen to be an ideal opportunity to test planning and design methods among them research and briefing. In fact it could be likened to a 'hospital planning laboratory' that could benefit every aspect of the Department's published guidance, as well as its advisory and other work.

The research and briefing work at Greenwich was not intended to lead to the choice of overall layout and shape of the new building but rather to 'fill in' and test an already selected building shape. It was not a question of layout and building

shape arising from an analysis of user requirements but rather ascertaining how flexible were the basic physical limitations. Both the briefing research and the physical planning of the building went on in parallel and affected one another all the time; an interactive process.

From the architectural and engineering point of view a number of design factors were being tested. Experience on the design of several new hospitals had led to theoretical studies by the DHSS on which factors in layout could contribute to an improvement in operation. The high rise tower block design of hospitals was the trend in the United States during the early 1960s but although this seemed acceptable for up to 300 hospital beds, schemes planned for 700 or more hospital beds in the United Kingdom created problems. The most important of these appeared to be the impositon of severe restrictions on the layout and relationships of various departments which limited their ability to grow and change, as well as complicated questions of adjacency.

There were examples being planned or built in the United Kingdom of five out of the six shapes of hospitals illustrated in Fig 11. The one missing was the low, compact shape involving deep planning with a large proportion of internal rooms and mechanical ventilation. Studies by the MOH showed that this type of hospital could have advantages for a small site like Greenwich, particularly as a relatively large amount of accommodation was needed.

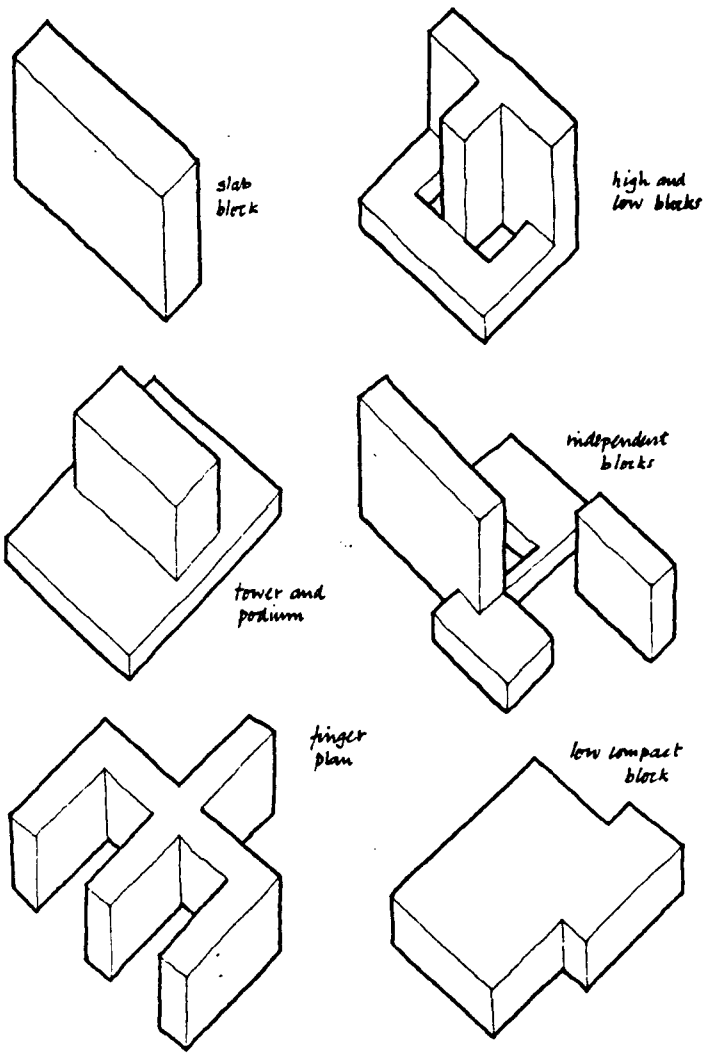


FIG 11
Six hospital shapes (Hospital Research and Briefing Problems, 1971)

The adoption of this building shape enabled the designers to test a number of planning concepts. One of the most interesting of these was the introduction of a 6 foot high (approx 1.8 metre) interstitial service space between each floor which permitted the utmost flexibility of mechanical and electrical services. Provision of this service space reduced the number of vertical service ducts which would otherwise have been necessary, permitted a wide span, deep beam building to be used enabling engineering services to be located so as to avoid getting in the way of usable spaces and rooms. In addition, the so called interstitial spaces gave freedom of access to maintenance staff for repairs without interfering with laboratory or hospital work.

Other aspects which formed part of the Greenwich project included more compact planning and grouping together functionally related departments in such a way as to reap benefits in terms of convenience, flexibility in use, economy of space, reduction of journey times for staff and supplies, and possible use of shared accommodation or engineering services. The basis for this planning centred around a number of outline hospital planning policies (Fig 12).

The Greenwich Project made it possible to place both research and briefing into a logical sequence of planning and give an opportunity to evaluate the effectiveness or otherwise of the methods used. Green et al (1971) mentioned that in the early stages of the Greenwich project it was apparent from comments

was agreed that it would be acceptable if a 9 in diameter hole for a duct or pipe could be made in any 2 ft square of floor or ceiling. The layout of walls and partitions was to be based on a planning grid of 2 ft in accordance with the then current recommendations on dimensional coordination. This related to the larger scale structural grid of 16 ft which proved to be an economic spacing for columns carrying simply supported steel and concrete beams spanning 64 ft. The external columns were placed outside the peripheral walls to avoid awkward junctions between partition walls and columns, and to give maximum freedom in the arrangement of rooms within the discipline of the 2 ft planning grid. The external 'eyebrow' thus formed also helped to give some solar shading and a means of easy access to the outside wall for maintenance and cleaning.

2.7 **OUTLINE HOSPITAL POLICIES** So far, this section has concentrated on describing the way in which the subjects for investigation in the Greenwich project were embodied in a building layout and shape related to the site. This description, by itself, does not give a complete basis for understanding the research and briefing methods. There were also a number of outline hospital planning policies which were established at the outset and which form an essential part of the context.

These may be summarised as follows.

1 A district general hospital of about 800 acute, maternity, geriatric and psychiatric beds and related diagnostic, treatment and outpatient services to be provided on one site to serve a population of about 160,000 people.

2 Staff residential and industrial supply service facilities to be housed independently of the main clinical services. Management and training facilities to be provided alongside or within the main hospital. Close collaboration with local health authorities and general practitioners to be encouraged.

3 Facilities, such as supply services, which can be shared for a larger unit than a district general hospital, to be centralised to serve a group – or larger unit – as appropriate. As many facilities as possible to be shared between departments in the hospital to economise on capital and running expenditure, provided this does not interfere with efficient operation.

4 Communications for people, ideas and information to be simple, quick, direct and reliable. Ease of control and supervision to be aided primarily by layout, or by electrical or mechanical communication systems – where suitable layout is not possible.

5 Departments to be located to give maximum convenience for access by patients and staff, especially for emergency cases and for the disabled and aged. Layout of accommodation to encourage ease of orientation for staff, patients and visitors.

6 Supply and distribution of goods and disposal of waste to be simple, reliable, convenient and quiet as far as is consistent with considerations of infection control, security and economy.

7 Environmental control to be achieved by exploitation of building shape in combination with full use of reliable engineering design techniques.

8 Space provision to be equivalent to Building Note 3 standards, or less where research indicates that performance requirements are not jeopardised. The main building support structure to be designed to last for at least 60 years, but the secondary cladding and finishing elements, and the engineering services, to be designed to be replaceable within this period.

9 Equipment to be so located and designed that maintenance, repair or replacement will involve minimum interference with normal operation of the hospital.

10 Cleaning and maintenance of the building to be effected with the minimum cost and inconvenience to users.

11 The building and engineering services to be easy to adapt to varying functions and to allow provision for the hospital and its constituent departments to grow – or shrink – as needs and resources dictate.

12 Staffing costs to be kept to the minimum consistent with a good standard of service to the patient.

FIG 12
Outline Operational Policies - Greenwich District Hospital.
(Hospital Research and Briefing Problems, 1971)

made concerning recently completed hospitals, that quite often a new building did not provide the user with what he thought he was going to get. They considered even worse that,

> 'this situation often arose when user and designer each thought that they had understood the ideas, language and requirements of the other. There was an area of misunderstanding that had to be probed and allowed for in the research and briefing work'.

The Greenwich team set out to construct a briefing organisation that would lead to the possibility of common objectives being established between users and designers. In order to clarify the complexity of the situation three broad zones of activity were identified (Fig 13). A briefing organisation was necessary to resolve problems associated with the first two zones for in the case of Greenwich this involved four authorities, the DHSS in an approving and advisory capacity, the South East Metropolitian Regional Hospital Board as the client, the Greenwich HMC as the users and the Hospital Design Unit of the DHSS together with private consultant structural engineers as the designers.

The briefing organisation for Greenwich was arranged into three tiers (Fig 14). The top level Steering Committee was equivalent in the 1960s to the Central Planning Group in most Regional Hospital Boards, but perhaps the most important

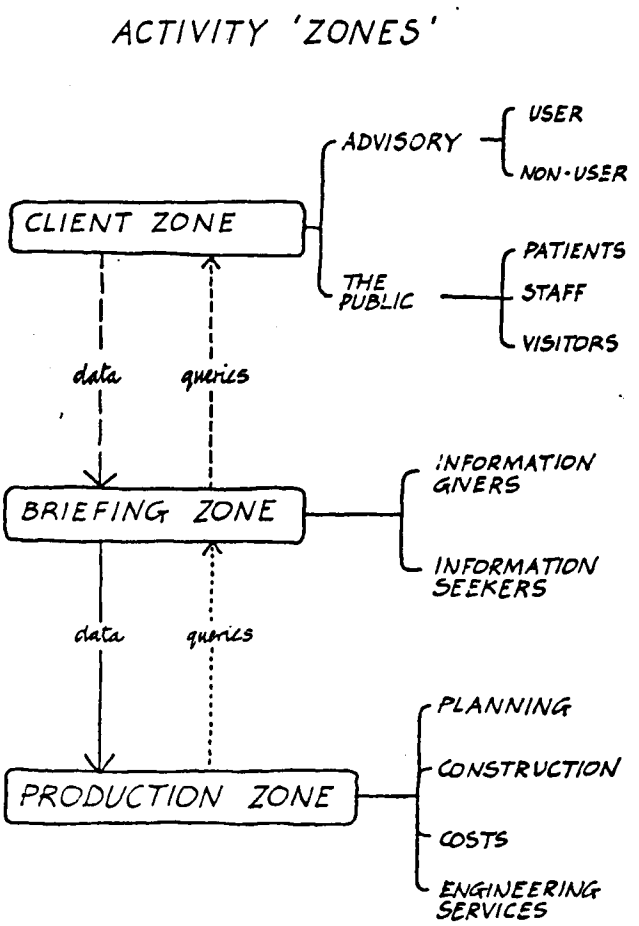


FIG 13
Activity Zones: Showing the three broad zones of activity involved in designing any hospital building. Data flow in one direction and queries in the other.(Hospital Research and Briefing Problems, 1971)

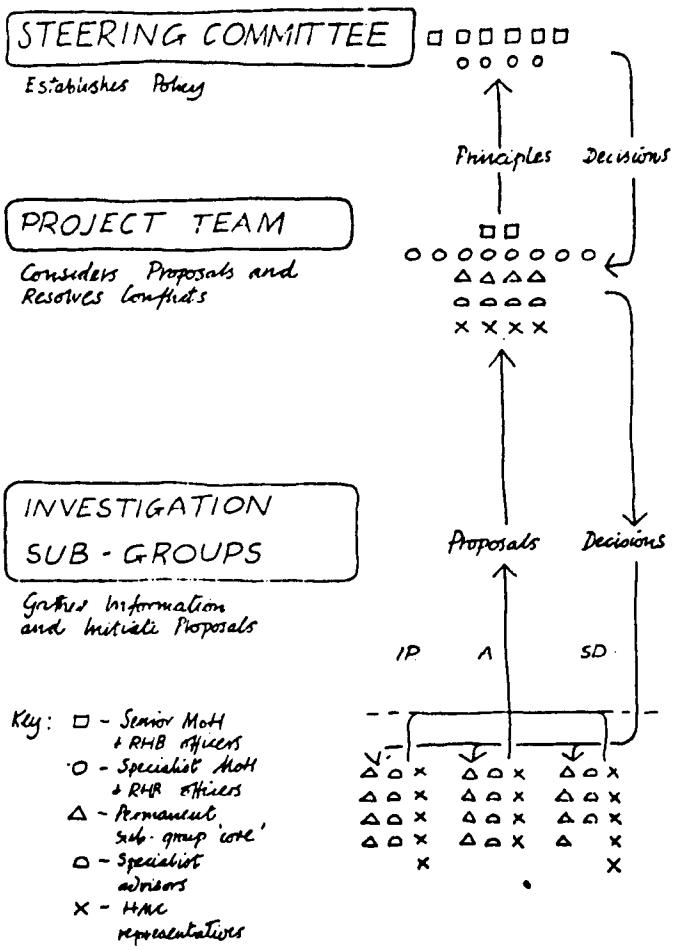


FIG 14
The three tier briefing system adopted for the Greenwich Project. (Hospital Research and Briefing Problems, 1971)

level in the organisation was the Investigating Sub-groups where the detailed briefing investigations were carried out. These were multidisciplinary teams consisting of a common nucleus of the project secretary, a doctor, a nurse, an engineer and two architects, and were supplemented as necessary by a number of specialist advisers according to the subject under discussion. The Greenwich approach to briefing was by functions; the investigation beginning first by examining each of the main functions and potential organisational patterns at whole hospital level and then the functions applicable to individual departments or wards. For example, as Green et al (1971) described,

> 'in-patient care, as a hospital system, was examined prior to considering the detailed design of "wards". This enabled the whole range of patients' needs to be considered from the time he first saw his family doctor until after he was discharged from hospital'.

The method of data collection at Greenwich was an analysis of several methods which included patterns of activity determined from statistical records, questionnaires to collect information from users,, observation of user activities, and discussions between users and advisers. To facilitate this a logical sequence of procedural headings and associated check lists were developed. (Appendix 2) The main headings were as follows:

A. Decide how you are going to carry out the investigation

B. Find out the general facts about the subject being studied

C. Find out about the place where the subject is to be situated

D. Find out how it is to be used or operated, by whom and the accommodation needed

E. Find out what conditions are required for proper use or operation

F. Find out what facilities are required

G. Find out what limitations there are on the use or design of the subject

H. Propose a design to meet the requirement stated

I. Decide how to fabricate the design

J. Find out how it works in use.

The relationship of the various procedure headings to one another is shown in Fig 15. The six stages of the 'design

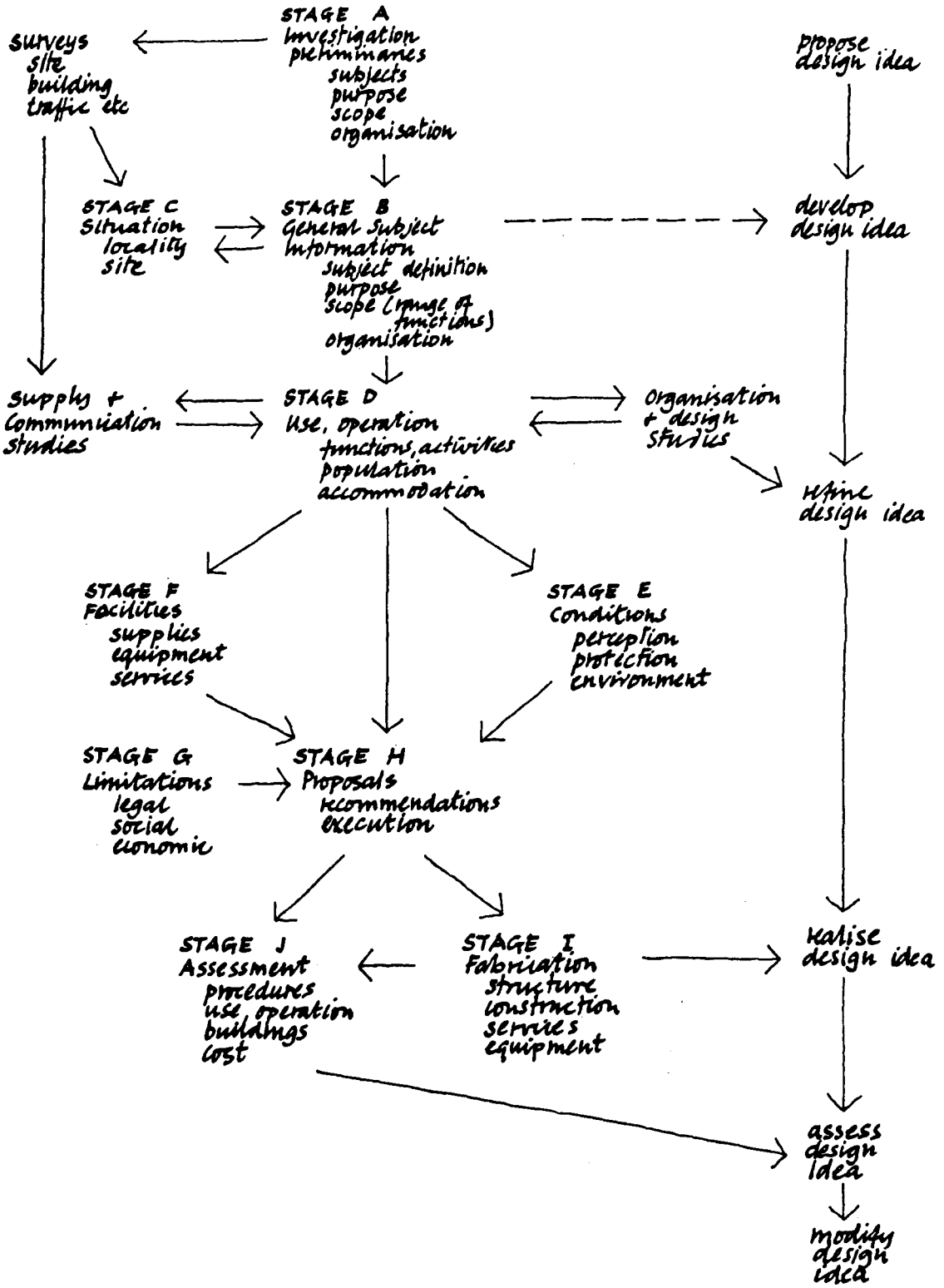


FIG 15
The briefing investigation network as it existed in the Greenwich Project. (Hospital Research and Briefing Problems, 1971)

idea' and its development throughout the project are set out down the side of the diagrams. These design ideas acted as a control for the investigations being modified as the project progressed. The sequence or content of the procedure headings might vary according to the investigation being undertaken, for example in surveys or work studies some might be inappropriate and were omitted.

As the briefing process progressed the data collected was presented in a number of forms. In addition to systematic recording of data in a convientional way in minutes on data sheets, and drawings, a good deal of information was presented in functional diagram form. It was here where the research aspects of the Greenwich project offered an alternative approach for use of traditional types of flow or bubble diagrams (Fig 16) to show space or activity relationships can be misleading as they may be taken to indicate planning proposals. Green et al (1971) explained the 'functional' approach (Figs 17 and 18) which was adopted at Greenwich,

> '... A problem which the researchers had to solve was to devise a form for such diagrams so that they would reveal any gaps in knowledge, and also provide a basis for producing and evaluating layout proposals at hospital, department and room level ... A device ... known as a "process chart" or "functional diagram", was adopted for the Greenwich project and on such diagrams

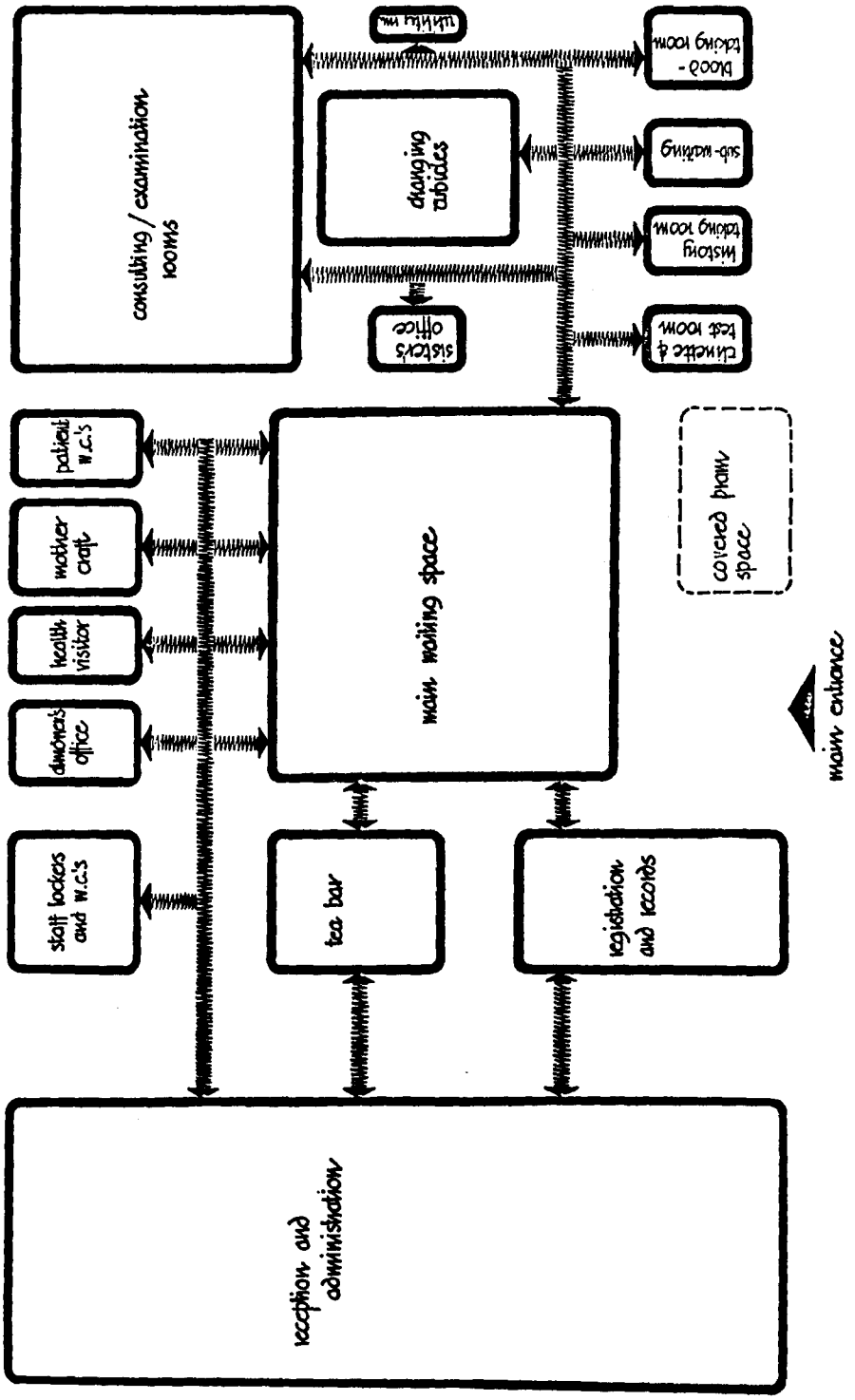


FIG 16
The traditional type of flow or 'bubble' diagram which may be mistaken for definite space planning proposals, when intended simply to represent functions. (Hospital Research and Briefing Problems, 1971)

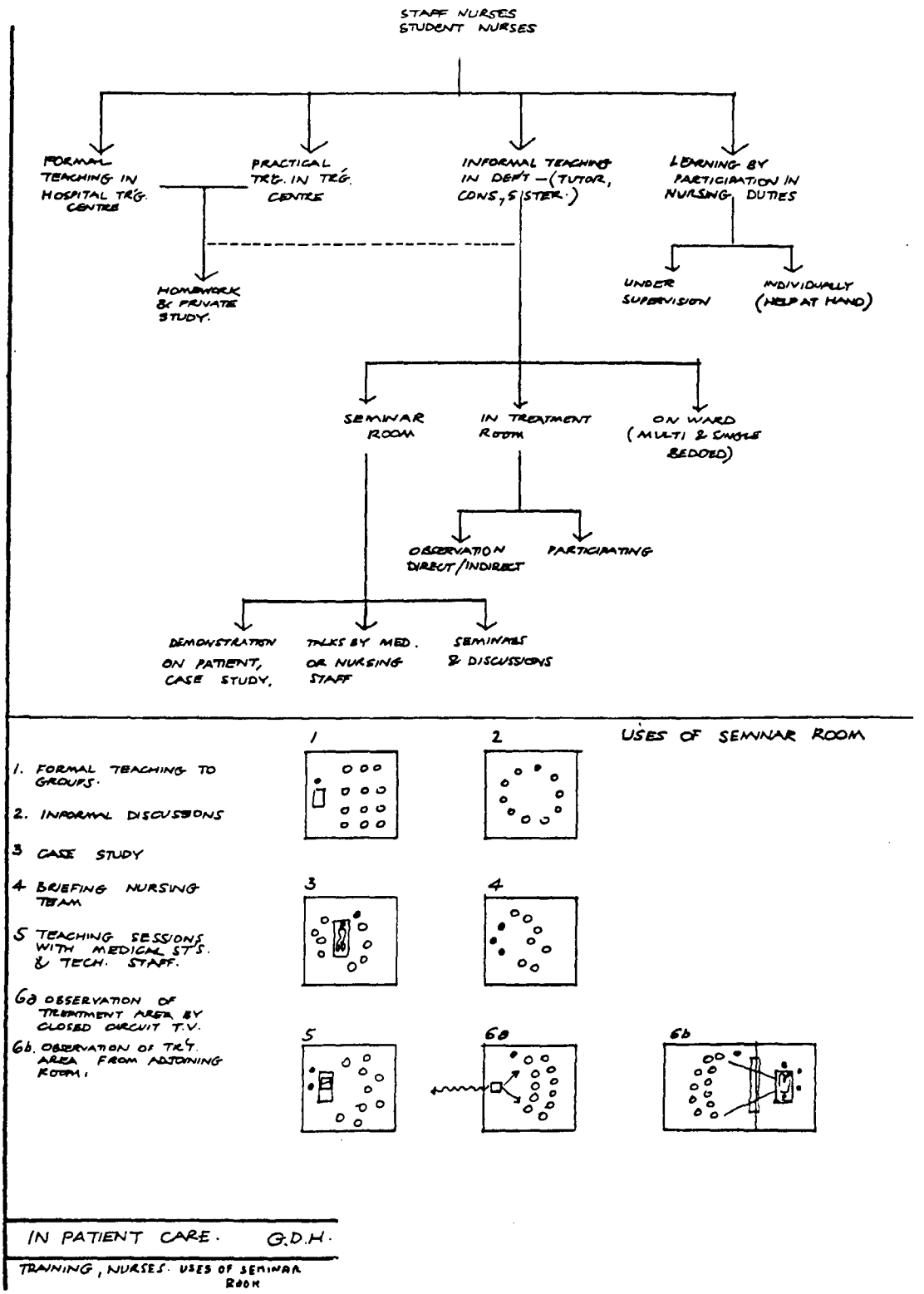


FIG 17
An example of the Greenwich functional diagrams based on the process charts used by industrial plant engineers: these proved to be a good way of representing planning proposals rather than suggesting actual spaces. (Hospital Research and Briefing Problems, 1971) (see also Fig 18)

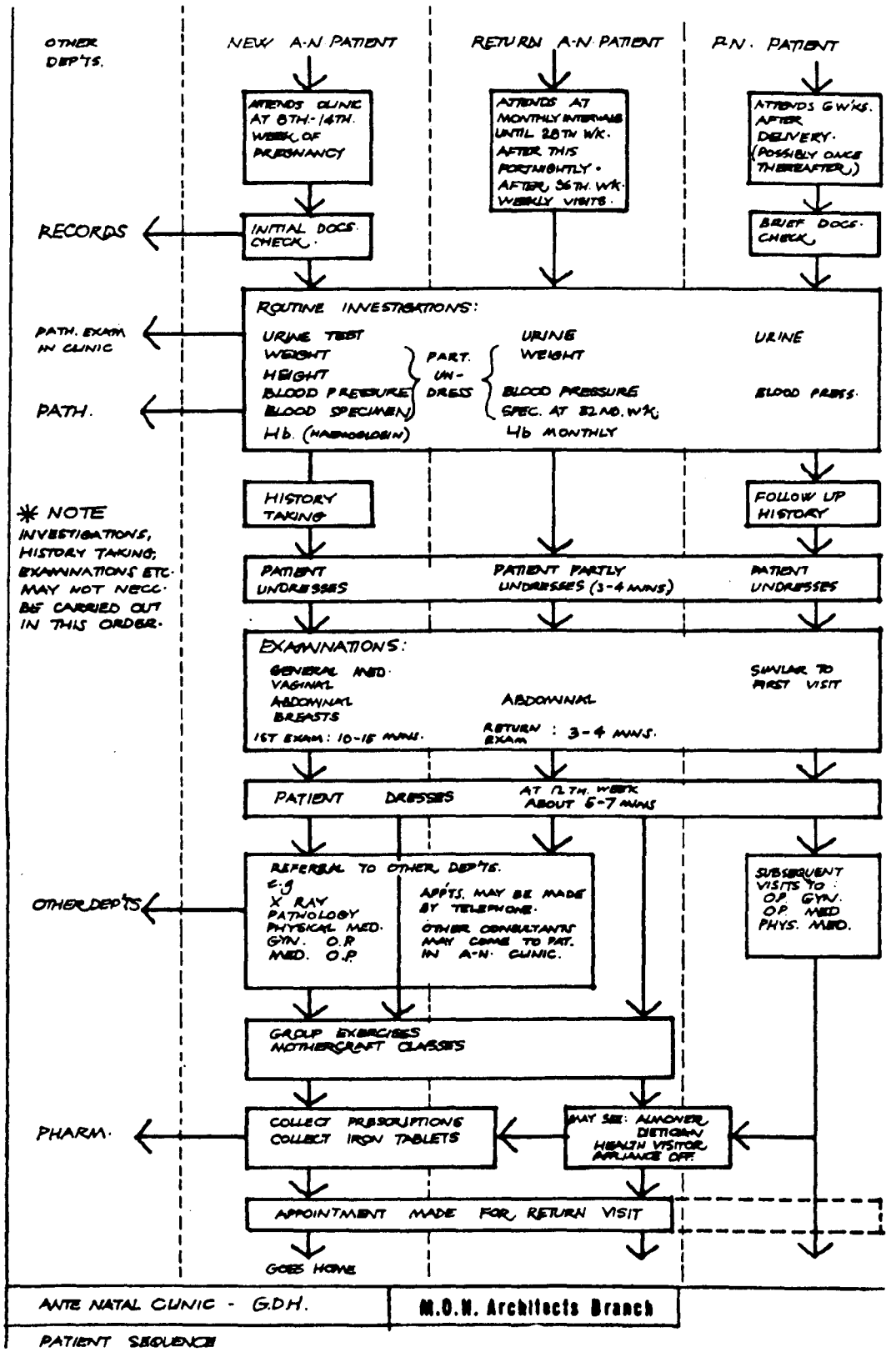


FIG 18

Another example of the Greenwich functional diagrams based on the process charts used by industrial plant engineers: these proved to be a good way of representing planning proposals rather than suggesting actual spaces. (Hospital Research and Briefing Problems, 1971) (see also Fig 17)

were represented sequences of events applying both to people and things. This clarified the nature of the relationship between the various functions and activities and could be produced so as to illustrate different degrees or levels of detail'.

These functional diagrams often formed the basis of sketch plans which analysed the principal movements of staff or supplies (Figs 19 and 20). In addition, considerable use was made of modelling devices including mathematical models to help solve the traffic circulation and lift problems, minature plastic building bricks or panels, and full size scale mock-ups of various activity spaces, rooms and equipment.

The main attribute of the Greenwich briefing system was the way in which basic activities were analysed by the investigating sub-group to provide a brief with a clear understanding of how a hospital works (Fig 21). From this information the designer was able to appreciate the characteristics of flow patterns of staff, patients and supplies and by innovative designs make the most efficient use of space. These studies provided design information which could be used as a basis for future design guidance and planning, for example the development of the 'string' of combined consulting/examination rooms in out-patients departments, the sharing of rooms between in-patient wards, the size and arrangement of bedrooms. This activity design

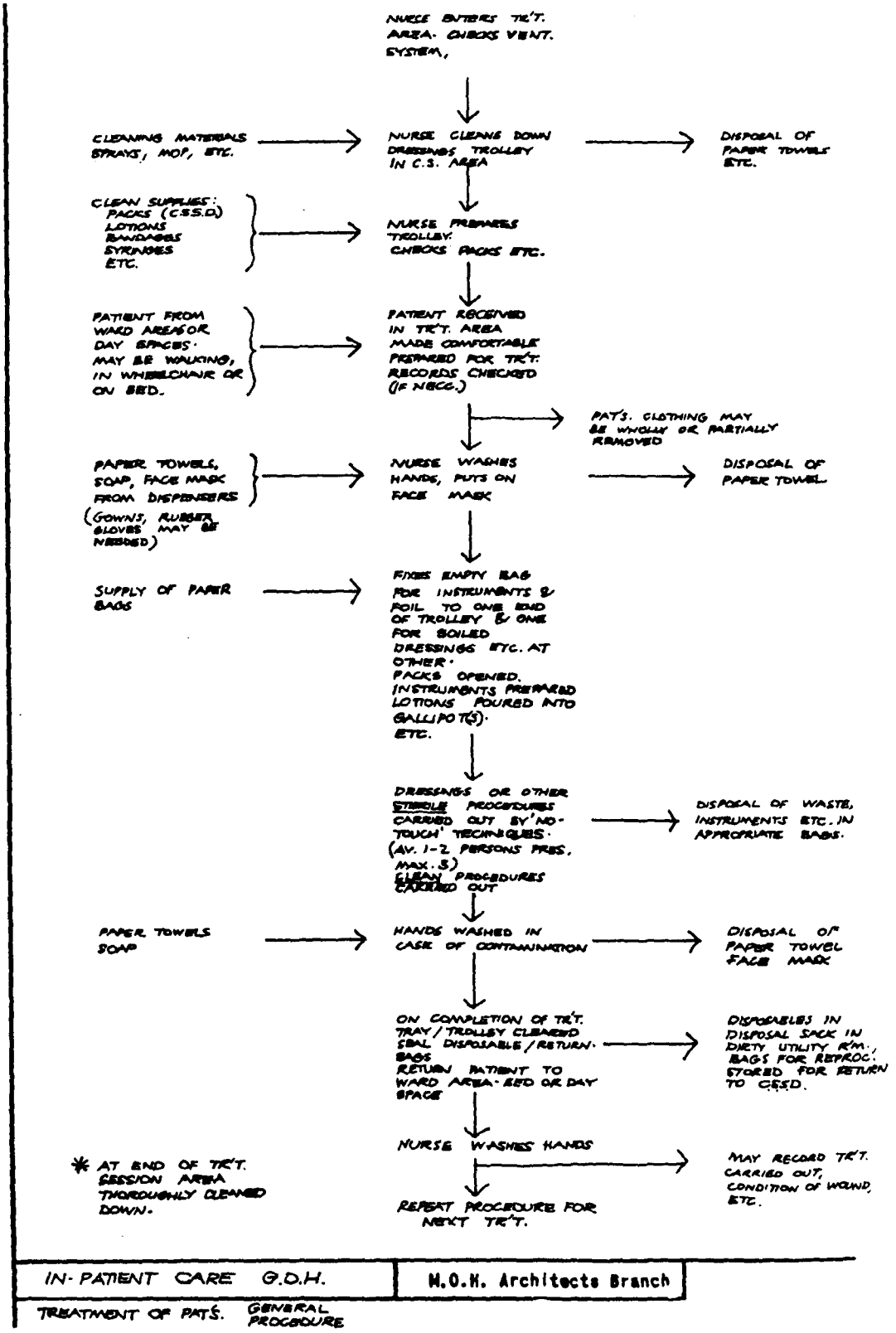
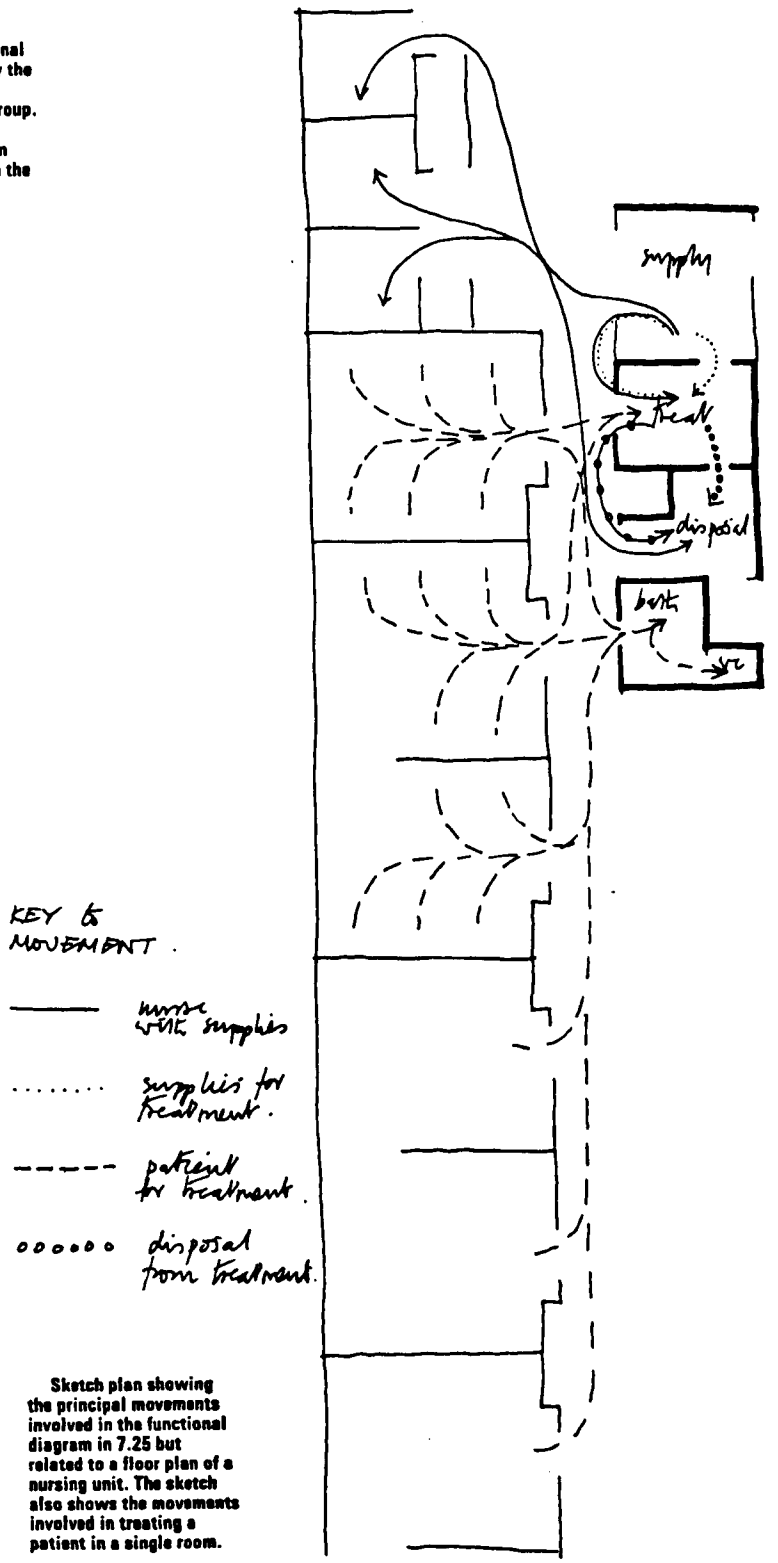


FIG 19
Greenwich - example of a functional diagram dealing with clinical activities involved in the treatment area. (Hospital Research and Briefing Problems, 1971)

. Greenwich—an example of a functional diagram prepared by the in-patient care Investigating Sub-group. It deals with the activities involved in treating a patient in the treatment area.



Sketch plan showing the principal movements involved in the functional diagram in 7.25 but related to a floor plan of a nursing unit. The sketch also shows the movements involved in treating a patient in a single room.

FIG 20
Sketch showing the principal movements involved in the functional diagram, but related to a floor plan of a nursing section (ward). (Hospital Research and Briefing Problems, 1971)

office MOH and SEMAS — by JG
job GREENWICH DISTRICT HOSPITAL (St. ALFEGE'S) — date 26.9.63
subject In-Patients - Organisation
B 4/5 Economic Aspects - Labour

1. As much direct visual supervision as possible to be provided but patients privacy also to be considered e.g. single rooms to have glazed panel in door (and corridor wall).

RHB - "Why 6 beds?"

2. 6 bed bays - however openly planned are less easy to supervise than Nightingale ward.
3. Staffing figures should not be presupposed at this stage but staffing shortages may occur temporarily and be allowed for in planning.
4. More privacy and less noise should be the aim in design and layout.
5. Use of call systems should be explored as an aid in reducing labour content of nursing work. COM
6. T.V. unlikely to be justified on cost grounds (it is not efficient in use when televising subject in dim light when it could be of most use - e.g. in single rooms at night.) COM

ref: Lakenheath U.S.A.F. air base hospital

7. There might be a case for special T.V. control in single rooms or intensive care unit when nursing staff are in short supply - also for monitoring senile patients, for example, or for geriatric and seriously ill patients in 6 bed wards COM
8. Monitoring systems can be useful in intensive care units and in anaesthetic rooms - 'Fingerstall' clamped on finger end to record pulse, temperature and blood pressure. Very good for use in intensive unit. SD/EQ

RM/AN
23.1.64

In-Patients - Function
D7 Medical procedures (contd.)
Ward rounds

Purpose of the ward round is to check on the progress of the patient, to order or alter treatment, and to make further diagnoses.

The smallest ward round consists of a houseman and the ward sister or staffnurse, but another nurse will often also go on the round. COM

Matron

There is at least 1 round per day. The main one is in the morning. The doctor says a few words to all the patients; there is limited examination in bed for a few patients with special symptoms and may carry out some minor treatments. He examines the temperature and other charts, and in a few cases the records, of the patients. The sister takes the records trolley (with a diagnosis tray) on the round; the temperature chart may be kept with the patients notes or on the bed. REC

Mr. Sewell

There is sometimes a subsidiary round in the afternoon which is relatively perfunctory. The houseman again visits at 10 p.m. mainly to prescribe, but he may see a few patients. The night round ends with a cup of tea.

The major ward round occurs 1, 2 or 3 times a week. This consists of the consultant, possibly a registrar, and the houseman, the sister, nurse in charge of the patients, and any other nurses who are free at the time. (Not many other activities can take place at the same time as a major ward round.) COM

Matron

FIG 21
Greenwich - example of the Investigating Subgroup notes.
(Hospital Research and Briefing Problems ,1971)

information was supplemented by operational policy statements derived from sketches by the investigating sub-groups. An example of these are illustrated in Figs 18 and 19.

The briefing method used at Greenwich could be considered as providing a valuable contribution to design. Much of the work concentrated on very detailed analysis of function both at whole hospital and departmental level. In some instances it may have been the first time that hospital user activity level has been studied in such great depth and the information generated enabled the designs to make the most efficient use of available space.

Much of the research and conclusions reached in the Greenwich project have already been fed into national guidance and design data. The detailed analysis of functions produced information which is valid without further manipulation. To repeat all this detailed analysis for every new project would simply be 're-inventing the wheel', even though it could be argued that Whole Hospital operational policies subsequent to Greenwich have changed and require very different design solutions. Indeed, there may be certain functions which are new or modified, and that in these instances detailed studies of the Greenwich type would be a valuable contribution to the brief. But without the support of the experienced and enthusiastic designers who were involved in the Greenwich Project, it is doubtful whether the general use of this method is appropriate to achieve a comprehensive brief within

a reasonable project time scale. As a research tool and generator of neutral design information from development projects such as Greenwich, and to undertake studies of special design problems the method has much to offer. But it utilises a number of components which do not easily come together to create a total briefing package suitable for general use by NHS 'proxy' users, who in the future are likely to constitute the majority of Project Teams.

Ministry of Public Building and Works (MOPBW)

6.3 Activity Data Method

In 1966 the MOPBW, Research and Development Section isssued an R&D Bulletin - Activity Data Method (ADM) - a method of recording user requirements. The method described was being used at that time in connection with the army's chain of permanent storage depots and workshops in the United Kingdom.

The MOPBW (1966) pointed out that one of the most difficult tasks in the building process is to provide the designer with a clear and comprehensive statement of the user requirements. The Bulletin stated that,

> '... At present the most common form for recording requirements is a schedule of rooms with details of the furniture and fittings for each room. But the designer needs to know a great deal more before he can design

a building. He will need information on the activities to be carried out in the various rooms and on the way in which these activities are inter-related - to name only two of the many points he will be expected to take into consideration. Normally he collects this information in a haphazard way as the design stage proceeds, committing it to memory or scribbling it on scraps of paper. In these circumstances even the most conscientious and confident designer may overlook a number of details which may give cause for complaint when the building is finally occupied'

The MOPBW regarded the ADM as being able to provide the designer with as complete a statement as posssible of the users requirements before the design stage is reached. It was one of the first attempts to move away from a schedule of rooms which may pre-suppose a design solution, and instead record the activities which are intended to take place in the building. The Bulletin described standard data sheets and diagrams intended for use by all members of the design team. (Fig 22) These data sheets were assembled as a compact document in a form which enabled easy revision and the addition of other information as required.

The sheets were divided into two sections. The left hand side described the activity and enumerated the people and things concerned and illustrated the various amounts of space required. The right hand side described the quality of the

List of Activities

Example taken from Army Aircraft Workshop

Primary Activities

1. Command of Workshop
2. Administering
3. Technical Control
4. Holding Technical Publications
5. Supervising Aircraft Servicing
6. Parking Aircraft
7. Aircraft Servicing
8. Ground Testing Aircraft
9. Painting Aircraft
10. Supervising E.I. & R. Servicing
11. Electrical Component Servicing
12. Radio Equipment Servicing
13. Instrument Servicing
14. Battery Servicing
15. Supervising Ancillary Servicing
16. Tyres and Wheels Servicing
17. Hydraulic Equipment Servicing
18. Engine Parts Servicing
19. Spark Plugs Servicing
20. Textiles Servicing
21. Safety Equipment Servicing
22. Transmissions Servicing
23. Arms Servicing
24. Ground Equipment Servicing
25. Supervising RAOC Stores Section
26. Controlling RAOC Stores
27. Storing Spare Components and Parts (RAOC)
28. Storing Tools and Materials (REME)
29. Loading and Unloading Stores
30. Storing Aircraft Fuel

Secondary Activities

Parking Private Transport
Personal Cleansing
Changing Outer Clothes
Refreshment

ACTIVITY DATA

activity: AIRCRAFT SERVICING — number: 7

description

During working hours aircraft are serviced or have defects corrected. Components are removed for servicing or replacement, in some cases the aircraft will be stripped down to its structure. Most work is carried out on or about the aircraft the remainder is covered by other activities. The size of aircraft is likely to increase in future and it is possible that the servicing work will become more complex including work at present done by RAF and civilian manufacturers

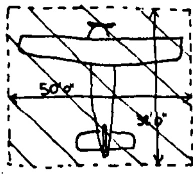
q people

technicians

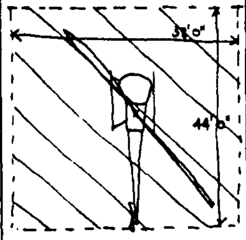
q things

fixed wing aircraft
helicopters
ground servicing equipment
benches
2 - Ton overhead crane point from which to suspend aircraft for centre of gravity test (5-Tons)

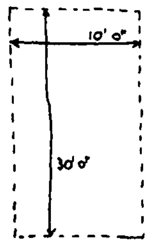
space components



Fixed wing servicing bay



helicopter servicing bay



storage bay for ground servicing equipment

layout notes

The crane should sweep all aircraft bays.
The ground equipment bay should be placed centrally

~~clear height~~ hook height 18 ft.

regulations and notes

Electric socket outlets should be raised 2-3 ft from floor to reduce risk of sparking fuel

D.C. only provided in new building.

AIR CONDITIONS

temp °F.	70	65	60 (crossed out)	55	50		no heat.
temp va.	±1°	±2°	±3°	±4°	±5°		
heat srs.							
humid %	80	70	60	50	40		
humid s.							
sm & fu.							
dust fre.	essent.	desirable (crossed out)	unnec.				
dust srs.							
infection							
hygiene	essent.	desirable	unnec. (crossed out)				

VISUAL CONDITIONS

lum/sq ft	50	[illegible] (crossed out)	20	15	7		
daylight	10	[illegible] (crossed out)	4	3	1·4		unnec.
glare ind	10	16	19	22	25 (crossed out)	28	
sunlight	excluded	undesir. (crossed out)	desirable				
view out	essent.	desirable	undesir. (crossed out)				
privacy	essent.	desirable	undesir. (crossed out)				
blackout	essent.	unnec. (crossed out)					
special							

SOUND CONDITIONS

accept.n	15	20	30	35	40	50 (crossed out)
noises	electric hand tools, engines of ground equipment					
RT.secs	0·75-1·0	[illegible] (crossed out)	1·0-1·5			
privacy	essent.	desirable	unnec. (crossed out)			

SAFETY CONDITIONS

human	
security	no unauthorised persons permitted
fire risk	fuel in aircraft, see notes

DIRECT SERVICES

disposal	
h. water	
c. water	
drainage	
gas	
comp a.	no 2 outlets (69-100psi) / bay
steam	
elect p.	no 2 outlets (240v 15a AC) / bay; no 1 outlet (24 v DC)
telephn.	
oth. com	

DIRECT DEMANDS ON FABRIC

loading	80 lbs/ft² (aircraft > 6,000lbs)		
spillage	oils		
foot tr.	moderate		
wheel tr.	Tyred - light		
impacts	tools and components		
abrasion	dragging of jacks, stands etc		
easy cl.	essent	desirable (crossed out)	unnec.
vib free	essent.	desirable (crossed out)	unnec.
vibration			

FIG 22
Activity Data Method: Example taken from Army Aircraft Workshop- list of activities, and activity sheet describing Aircraft servicing. (Ministry of Public Building and Works, 1966)

space required for the activity. Contrary to present-day practice, where user input is involved in formulating activity data sheets, it was considered the responsibility of the designer to prepare the activity sheets. He entered details on the sheets after discussing user requirements with his client.

The ADM was planned from the start to be capable of amendement to accommodate changing circumstances - rather contrary to the views of Green (1974). However, despite the innovative approach to the design of activity spaces, the method would appear to have had some shortcomings. At the time of publication the briefs prepared were for buildings to house organisations already in existence. These organisations had formalised structures which could be set out on charts and based on a good deal of management experience. This meant that a complete list could be made of all activities in the building and provided a basis for the activity space sheet required. Where a formal organisation did not exist, or where changes were required to be incorporated in the new building, an alternative method of listing activities was required. Suggestions were made as to how this might be tackled but no detailed solution was offered.

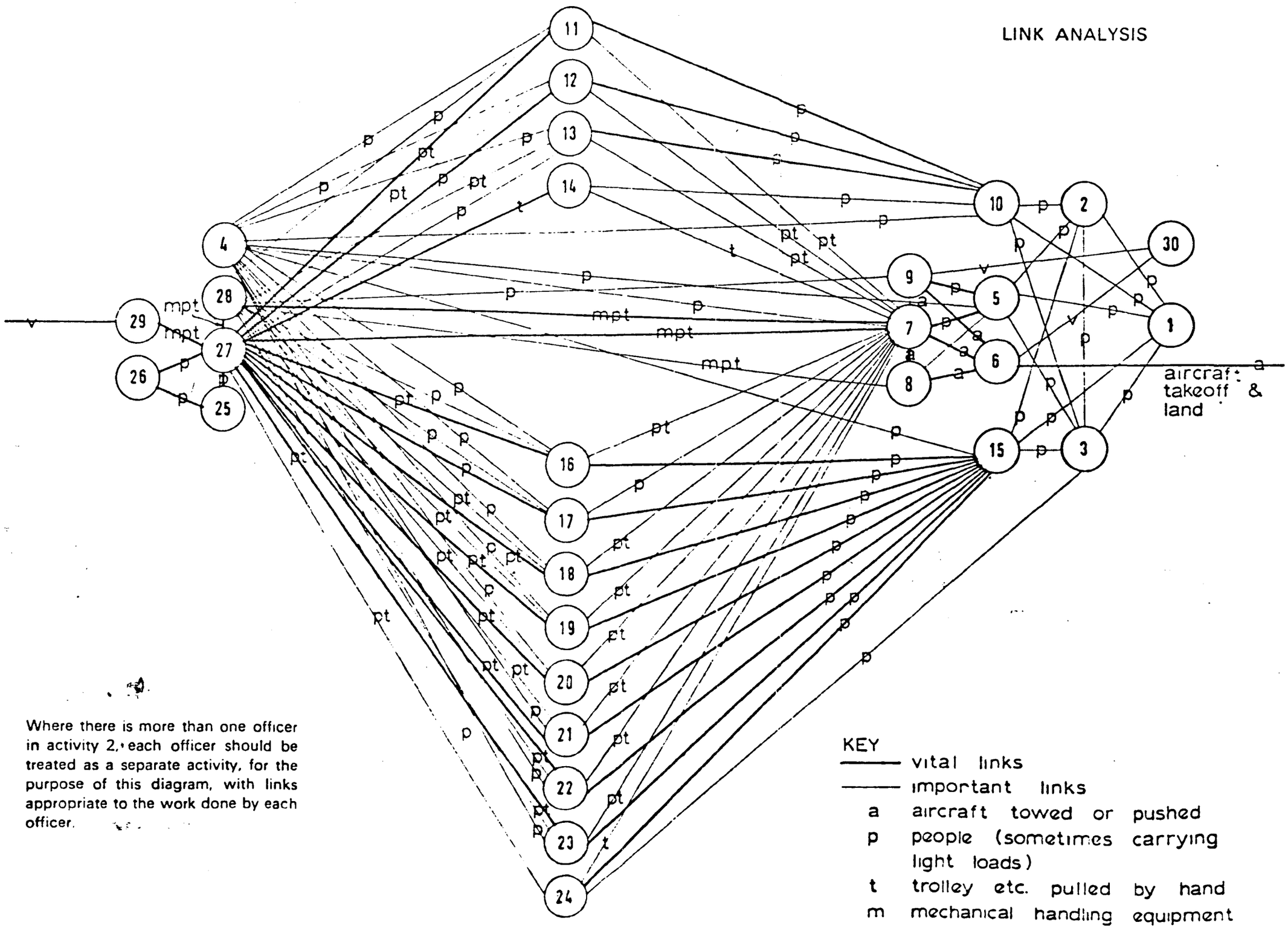
Although the activity sheets gave a good deal of information to the designer there were some deficiencies. Relationships of activities within the space were specified but little

information was provided on relationships between groups of activities, other spaces and operational aspects involving the total organisation. A link analysis chart (Fig 23) was available but appeared too complex to convey easily the nature and importance of such relationships. It was left entirely to the designer to accommodate the activities in a building in whatever variety and number of spaces he thought appropriate. The design solution which emerged may have proved satisfactory if the designer was experienced in that particular type of planning, but rather fragmented activity information could result in misunderstandings and abortive design work. The ADM also assumed that the nature and function of activities would remain constant and did not really easily accommodate changing circumstances.

Department of Health and Social Security (DHSS)

6.4 Co-ordinated use of Building Industrial Technology for Health Programmes (CUBITH)

The activity data method being developed by the MOPBW eventually influenced feasibility studies on the possible use of activity data by the DHSS. But this work was preceeded by studies on CUBITH in the late 1960s, following a need for the construction of health buildings to be framed within a growing but saturated building industry.



Where there is more than one officer in activity 2, each officer should be treated as a separate activity, for the purpose of this diagram, with links appropriate to the work done by each officer.

KEY

——— vital links

——— important links

a aircraft towed or pushed

p people (sometimes carrying light loads)

t trolley etc. pulled by hand

m mechanical handling equipment

V road vehicles

FIG 23
Link analysis chart (Activity Data Method, Ministry of Public Building and Works, 1966)

In the 1960s the construction industries were becoming overloaded with demands by industry and social public services (Radford, 1969). A number of reasons for this were promulgated:

- a declining site labour force,

- increase in unit cost as a result of further demand; quite the reverse to manufacturing industry where increases in unit production had resulted in a reduction of unit cost,

- the need to increase productivity to remain competitive.

At that time it was recognised that the stock of knowledge on the construction of health buildings based on accumulated experience was considerable. Guidance of various sorts was becoming available and new ground had been broken in design concepts and constructional techniques by DHSS development projects. (Heathfield, 1967, Hospital Management, 1968); MOH, 1968, Hospital Management 1968).

In the late 1960s it was thought that the development of a system of dimensional co-ordination in metric terms (Radford, 1962) would lead within a decade to the mass production of co-ordinated components (Radford, 1963). The stock of knowledge on closed building systems was in the process of

being re-shaped so that the systems would be able to draw from a body of nationally agreed components. Progressive views were emerging on the planning and design of health buildings and research studies were beginning to exert an influence on building development. The client user began to come into prominence as an indispensible source of knowledge and experience for the production of design briefs. Modern management techniques were being introduced. There was an acknowledgement that in the future there would never be sufficient resources to provide for all demands by unique design solutions, even by using technical inovations or the use of some standards, eg departmental designs. Radford (1969) considered it important to fundamentally consolidate and shorten patterns of work in health building and utilise effectively the skills and expertise of all concerned for,

> 'It requires no exacting knowledge to say that the present building process is anachronistic. There is no transaction process between the actions of each participant'.

Radford's view (1969) was that the situation of an increasingly saturated building industry and the accommodation of a store of knowledge and experience demanded a review of existing operations. He considered that the means were available to do this from both within and without the building industry.

6.4.1 Dimensional Co-ordination and Industrial Building, Hospitals Design Notes (HDNs)

The move to this point of view followed work started six years previously. In February 1963 the Ministry of Public Building and Works (MOPBW) issued a statement on Dimensional Co-ordination for Industrialised Building which set out recommended preferred increments related to dimensional requirements of housing, schools, hospitals and offices in the content of industralised methods of building (MOBBW, 1963). This was followed a year later by the first of a series of Hospital Design Notes (HDNs) entitled Dimensional Co-ordination and Industralised Building (MOH, 1964). The Note was intended to provide an introduction to the application of industralised building techniques to hospital (and some types of local authority health and welfare) buildings. HDN No 1 discussed,

a. the general principles affecting and the basic information required for, the design and construction of dimensionally co-ordinated buildings and components whether the latter are made on the site or factory produced;

b. the recommendations to relate the use of traditional materials and the design of factory-made standard components in a system of dimensional co-ordination;

c. the relevance to hospital building of the recommendations on the use of preferred increments published in February 1963, in the Ministry of Public Building and Works Statement DCI, "Dimensional Co-ordination for Industrial Building";

d. the work of the (MOH) Study Groups which were examining the practical problems of applying the method to the hospital building programme.

Although the emphasis in the HDN was on the technical aspects of industrial building it was recognised that there were associated requirements which needed to be considered to achieve satisfactory results. These were identified as,

a. a clear brief on the functional requirements which the building is to satisfy;

b. the use of preferred increments in the design of spaces and components;

c. the selection of a technique to relate components to each other;

d. the use of preferred dimensions in the design and production of ranges of dimensionally co-ordinated components and the variety reduction of all components;

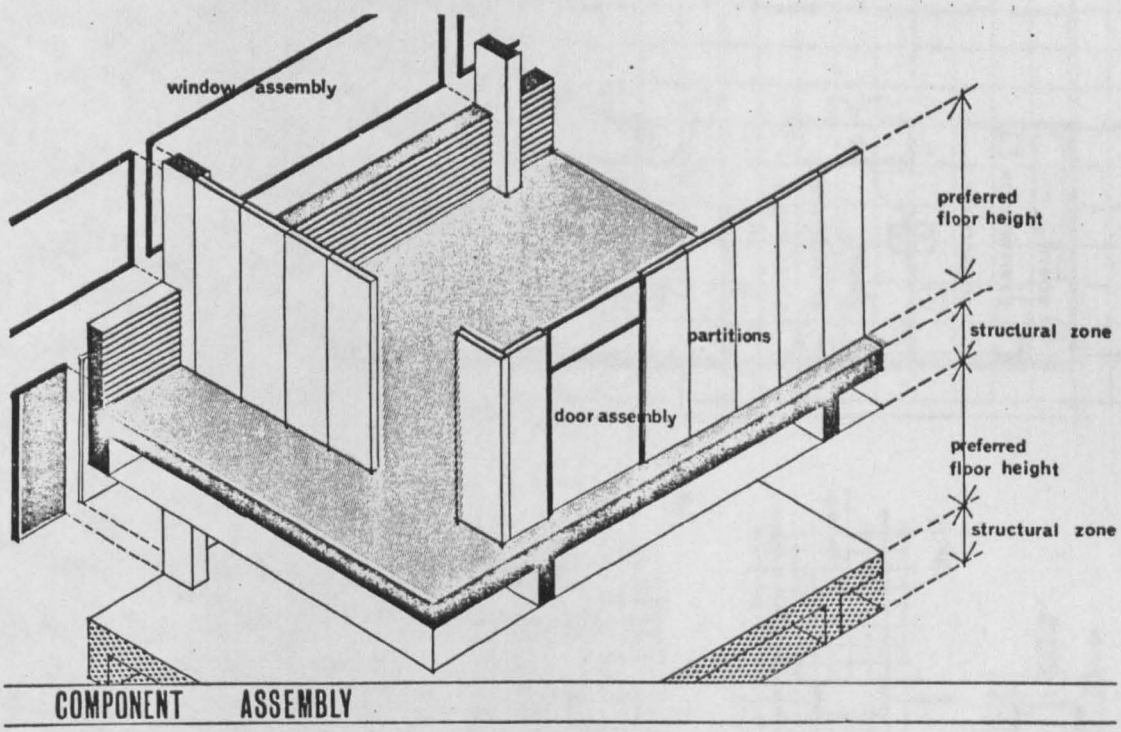
e. administrative measures to ensure the effective use of these new techniques by architects; engineers, quantity surveyors and industry.

The HDN gave detailed information as to how these requirements might be met, for example illustrations of dimensions, and component assembly (Fig 24) and planning grids (Fig 25). Of particular interest and directly relevant to this thesis was the reference to functional requirements and the two major considerations which needed to be borne in mind. These were,

i. the functions which the end-product (the hospital or health building) is required to perform; and

ii. the need to accommodate future changes in these functions even through the nature of these changes cannot be forseen with any precision?

It was emphasised that the functional requirements for hospital buildings are reflected in the decisions taken at each stage of planning and building, particularly briefing and recognised the need to incorporate in the design the ability for changes in use of spaces within hospital buildings to accommodate the rapid and continuous changes which occur in medical and nursing practice. The HDN set out the extent to which this could be reflected in the actual design dependent on the solutions available to the following;



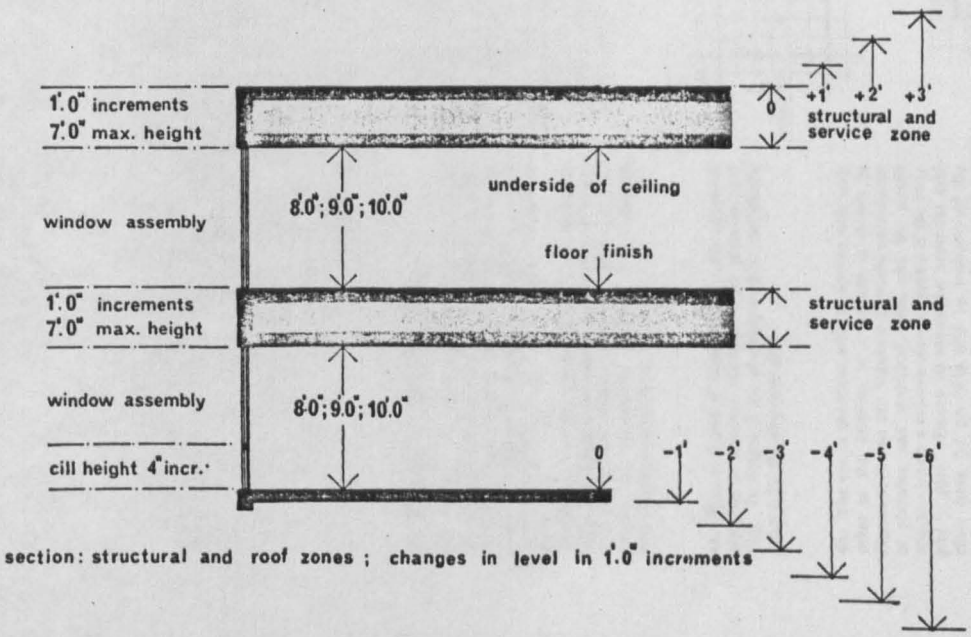


FIG 24
Dimensional Co-ordination for Industrialised Building - example of data - component assembly (top); preferred vertical dimensions of the structure (bottom) . (Ministry of Public Building and Works, 1963)

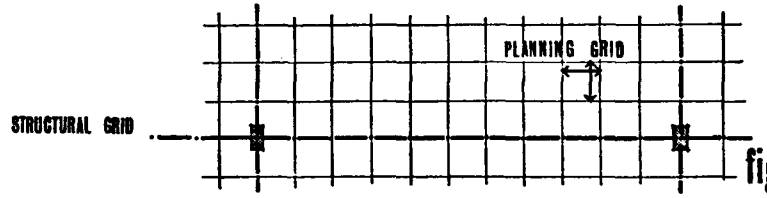


fig. 7.

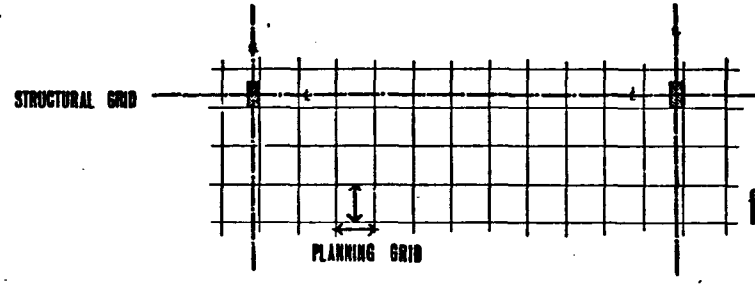


fig. 8.

(c) Illustration of reference techniques

47. Figure 6 shows(in outline only) the use of planning and structural grids in general assembly drawings for a hospital scheme, and illustrate the location of component assemblies in relation to these grids. In Figure 6, a 2 ft. 0 in. planning grid is shown
The figure also exemplifys the use of grid coding to assist in defining those areas which need to be drawn to a larger scale because of their complexity and to permit the components involved to be located precisely by relation to the basic grid.

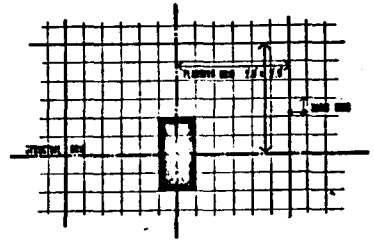


fig. 9

48. Figures 7 and 8 illustrate where the structural grid size is a simple multiple of the planning grid size. In Figure 8 the planning grid is consistently offset from the structural grid.

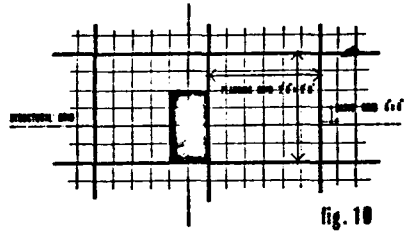


fig. 10

49. The use of the three grids in relation with each other in the location of a column is shown in Figures 9, 10 and 11. Figure 9 shows the coincidence of planning and structural grids, and the simple situation where a column occupies spaces of the basic grid in plan. Figure 10 shows the structural grid offset from the planning grid by multiples of the basic grid. Figure 11 again shows the coincidence of the planning and structural grids, but in this case the column does not fi'l spaces of the basic grid. Here, with components located by the basic grid, all components are offset from the grid, or a special or modified component is used, or a particular detail will be required.

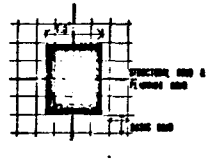


fig. 11

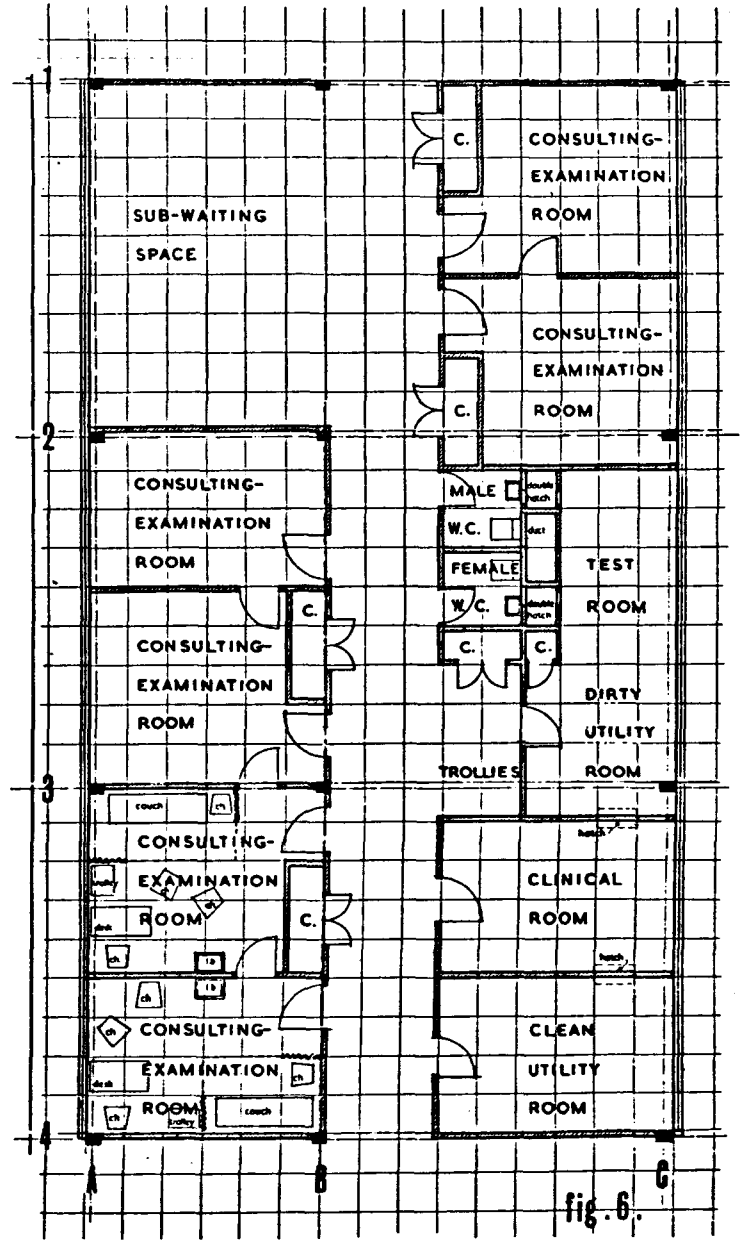


fig. 6.

FIG 25
Dimensional Co-ordination for Industrialised Building - example of data - 2ft 8in planning grid (top); method of using planning grid (bottom). (Ministry of Public Building and Works, 1963)

i. Study of user requirements, anthropometric data and the rationalisation of spaces;

ii. Practicable design techniques, eg depth/length ratios;

iii. Grouping of like user functions to allow for limited internal adjustment;

iv. Standardisation of layout and extensive techniques for mechanical services;

v. Provision for future lateral or vertical growth of parti-cular departments;

vi. Assessment of probable trends, eg it is probable that over a period of years the demand for specialist diagnostic and treatment facilities will increase;

vii. Design of components to achieve interchangeability when functions change.

The Ministry of Health intended the series of Hospital Design Notes to encompass the wide range of user requirements and activities associated with the use of industralised building techniques. Taken together these were to give information on the layout of individual departments, and standard design techniques and methods of construction which were being

developed for use on all health building projects. The context was described as the CUBITH Programme - Co-ordinated use of Building Industrial Technology for Health Buildings.

One such Hospital Design Note No 20 - 'Standardisation in Hospital Building: Briefing and Design' was never published and exists in draft form only. But this draft (MOH, 1968) did set out the principles of using CUBITH which were carried through in other documents into development of the programme. The document emphasised that whenever possible standard briefing and design material should be used since,

> '... it has become increasingly clear that an undue amount of time is being spent by the staffs of Hospital Boards and consultant designers in developing each project as though it were unique. Although inevitably hospitals vary, the great majority have certain features which are common, such as inpatient and outpatient accommodation, diagnostic and treatment facilities, and operating departments. Very often these sections or departments are designed as complete entities which are then fitted into the development plan for the whole hospital. Sometimes they are designed as additions or extensions to or replacements of existing departments. Some Hospital Boards have already evolved standard designs for a number of these departments for use in their regions and to that extent there has been some saving of time. There is a need however, for the

central supply of material for standard hospital departments incorporating wherever possible the work done in the regions.'

Draft HDN No 20 described the form in which information would be provided in the design notes for each department including,

a. operational policies

b. schedules of accommodation

c. architectural and engineering design sheets

d. a cost plan

e. an equipment list

f. study considerations

g. production plan.

The full production material which the MOH envisaged being available consisted of,

a. Standard material - intended for use in any health building project as well as being used for the brief and design material for all standard projects,

b. Project or department material.

This comprises all the details for a particular department using standard methodology and material, all project drawings, cost plan and bills of quantities.

In addition to Hospital Building Notes (page 55) the then Ministry of Health (MOH) during the late 1960s issued a number of guidance documents associated with the development of industrial hospital building. One of these, Hospital Design Note No 3, described studies by a MOH Architectural group which examined the availability of standard ranges of components all co-ordinated dimensionally and which would fit into any health building designed on the national pattern of preferred dimensions.

6.4.2 Health Building Production Systems

Subsequently the Department of Health and Social Security (DHSS, 1970) commissioned a computer programming consultant to study the application of Automatic Data Processing (ADP) techniques to the CUBITH system and his report identified further the objectives of the system and set out the various sub systems. In that report the main objective of the CUBITH system was defined as being,

'... to ensure that optimum design and construction techniques are applied to future Health and Welfare building, within an environment of contracted cost and time scale'.

It was considered that this could only be achieved by the application of standardised techniques, ie the gathering together of existing skills and expertise and the provision of easy access to this data to aid decision making. The report suggested that there was considerable scope for the automation of procedures which were both time consuming and expensive; for many day-to-day decisions could be facilitated by setting up a Management Information System which would evaluate possible choices according to set rules laid down in the light of experience with previous schemes.

The report acknowledged that the production system for Health Building schemes is divided into six separate sub systems; Brief, Design, Production Documentation, Construction, Commissioning and Evaluation. It was suggested (DHSS, 1970) that these six sub-systems were mainly time orientated and that it was preferable to consider the total CUBITH system as,

'... a continuous whole from which groups of related tasks or procedures can be selected for discussion in turn. For example, the procedures dealing with the

requirements, ordering, installation and evaluation of equipment cut across the six CUBITH sub-systems and can be said to form a sub-system on their own'.

These all embracing procedural sub-systems (Appendix 3) were identified as:

1. The Hospital Building Programme

2. Project Team Activities

3. Determination of Project Requirements

4. The Development Control Plan

5. Activity Data

6. Equipment

7. Staffing

8. Cost analysis

9. Design development

10. Production drawings

11. Engineering

12. Scheduling and component selection

13. Tender action and contracts

14. Construction

15. Services to the construction industry

16. Maintenance documentation

17. Commissioning team activities

18. Data base management

19. Project file

20. The on-line enquiry system.

Virtually none of these procedural sub-systems could be considered as being self contained and the report suggested that each should be developed within the framework of the total system. Flow charts indicated the procedures to be adopted in relationship to ADP methods, eg the processing of activity data (Appendix 4). The briefing procedures outlined such factors as the composition of the project team, assessment of need, determining functional requirements, disposition of facilities on a selected site, the use of activity data, selection of equipment and identification of broad staffing requirements for the project.

All these activities were seen as part of a common data base with ready access for control and decision making throughout a project. As a result of this and other factors, studies proceeded on the development of a standardised approach in hospital design. No purpose would be served in untangling the chronological order of the development of the various aspects which contributed to ADP and standardised hospital design. In fact development of the various components proceeded often in parallel and during this process the order of precedence altered as the studies proceeded.

6.4.3 The Harness System

Most of the actual project design effort was directed towards the Harness project, a logical development of the principles promulgated by CUBITH, which orginated in 1968 following a suggestion by Regional Hospital Board Secretaries, that the DHSS should co-ordinate the standardisation of planning activities among the Boards. Webber and Moss recorded this in 1973 when they described the main aims of the Harness programme as being,

> '1. To achieve a large measure of standardisation in future hospital buildings so that the limited resources of skilled planners and designers can be concentrated more on the early stages of planning, and later on evaluation, and in doing so,

2. to avoid stereotyped hospitals by providing a choice of sizes of departments and flexibility in assembling them.

3. To reduce the briefing and design period for a project and thus ensure that the hospital is as up-to-date as possible when it is opened.

4. To provide up-to-date guidance.'

The title 'Harness' applied to a method of designing and building hospitals took its name from the wiring system of a car to which all the electrical components are connected. In a Harness hospital it was intended that all departments would be assembled round a main corridor, known as the 'Harness zone', through which people, supplies and energy would pass. After considerable research, the vehicle chosen was a universal building block of 16 metres square from which departmental designs could be built by using a series of blocks assembled according to a set of rules to accommodate the functional content (Fig 26) (Webber and Moss, 1973, DHSS, 1972, 1974). This enabled the design of standard departments in such a way that they were capable of being linked together to form a unique hospital development out of standard parts, in response to local requirements of both functions and siting.

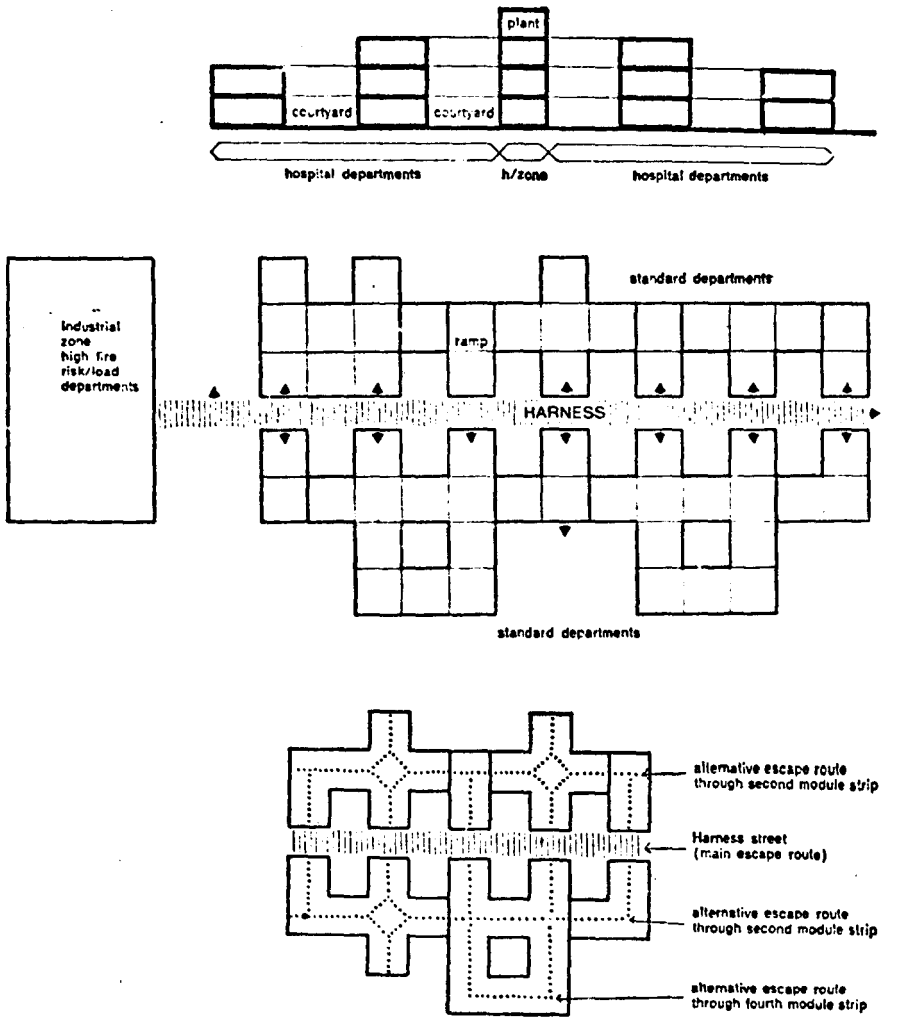


FIG 26
Harness Hospitals - planning configuration.
(Webber and Moss, 1973)

The relevance of Harness to this work is in particular the studies which have led to the use of ADP techniques in the briefing and design of health buildings. CUBITH saw all aspects of the process capable of being achieved through the application of ADP techniques. In the event some parts of the system have become freely available to health authorities in the form of computer packages, principally for development control planning, engineering systems, costing, equipping and other technical aspects. Much of this material was refined in association with the latest DHSS 'Nucleus' hospital projects subsequent to Harness being developed (DHSS, 1976[2]). In spite of all the systems development which took place, it seems remarkable that the briefing area remained relatively untouched. Some parts of what was originally the Cubith system have not been developed completely, indeed on the briefing front the main achievement has been the production of activity data material which still requires the prior formulation of operational policies as a basis for the selection of appropriate activity spaces. Although the 'Harness' and subsequently 'Nucleus' projects have utilised common formats for preparing the briefs for individual departments which led in turn to the selection of activity data, they could not be described accurately as briefing methods. This was because the techniques used for the consideration of options and compilation of the briefs were left to the methodologies devised by individual planning teams. This activity data has now been developed into a comprehensive data base, which differs from the original ADM of

the MOPBW in that the DHSS method provides neutral data which can be used for a variety of different operational requirements. At present, however, the method remains a manual system and only recently has work begun on possible automation.

6.4.4 DHSS Activity Data

The present Activity Data Base (DHSS, 1976, 1980) originates from the Activity Space Data Sheets developed for 'Harness' Hospital Projects (Moss, 1975). The system consists of Activity Space Data Sheets ('A' sheets) and Activity Unit data sheets ('B' sheets). The 'A' sheets give information on space use (Activity) equipment and environment (heat, light sound) (Fig 27). The 'B' sheets give details such as dimensions and servicing on specific items or groups of equipment. (Fig 28). Each 'A' and 'B' sheet is separately coded and accessible from an index which lists activity space/room types under broad functional headings or major character-istics of the activity unit required. Taken together, all the various 'A' sheets, 'B' sheets and index form a bank of information referred to collectively as the Activity Data Base (ADB).

During the briefing stage of a project and following the preparation of operational policies and a schedule of activity spaces (traditionally a schedule of accommodation), the A and B sheets are selected from an index and extracted

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

ADB	ACTIVITY SPACE DATA SHEET	C0103

ORIGIN DHSS DATE JUNE 1979

PROJECT CODE

ACTIVITY SPACE NAME CONSULTING, GENERAL

ACTIVITY UNIT SELECTION	1	ASSESSMENT x-ray illuminator double, wall mounted	A27AB
	1	ADMINISTRATION desk, single pedestal with chair and socket outlet	B14AQ
	1	TOILET handrinse basin	B27EB
	1	HOOK hat and coat, two	C03CB
	2	CHAIR upright stacking	C04CA
	1	TROLLEY dressing/instrument	C31CI

FUNCTIONAL DESIGN REQUIREMENTS

FACILITIES needed for the following activities

i) A patient who may arrive on foot, in a wheelchair, or occasionally on a stretcher/patient trolley, to be confidentially interviewed prior to examination if required, in adjacent examination room.

ii) Handwashing.

iii) Viewing X-ray films.

iv) Desk work.

v) Disposal of soiled dressings and soiled paper towels.

PERSONNEL

1 staff and 3 others
All day

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

Track, window curtain

PLANNING RELATIONSHIP

Direct communication with 1 or 2 examination spaces

FIG 27
Department of Health and Social Security Activity Data Base: example of 'A' Sheet, Consulting/examination room. (DHSS,1779)

TECHNICAL DESIGN DATA C0103

		SPACE REQUIREMENTS		SPACE LOCATION PERIPHERAL	SPACE LOCATION INTERNAL	NOTES
AIR CONDITIONING		Air temperature	Winter	18°C		
		Air changes	Natural or mechanical	NAT		
		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	300 lux		at desk
		Lighting intensity	Night	-		
		Lighting intensity	Local	-		
		Lighting intensity	Emergency	Grade B		H
	★	Glare index				
		Colour rendering		COLOUR CORRECTED		
SAFETY		Maximum accessible hot surface temperature		82°C	50°C	
		Maximum domestic hot water supply temperature		60°C	43°C	D
NOISE		Acceptable level of noise from outside				
		Total acceptable sound level within space		50dB(A)		
	★	Description of noise which cannot be tolerated within space		DISRUPTIVE		V
		% 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.

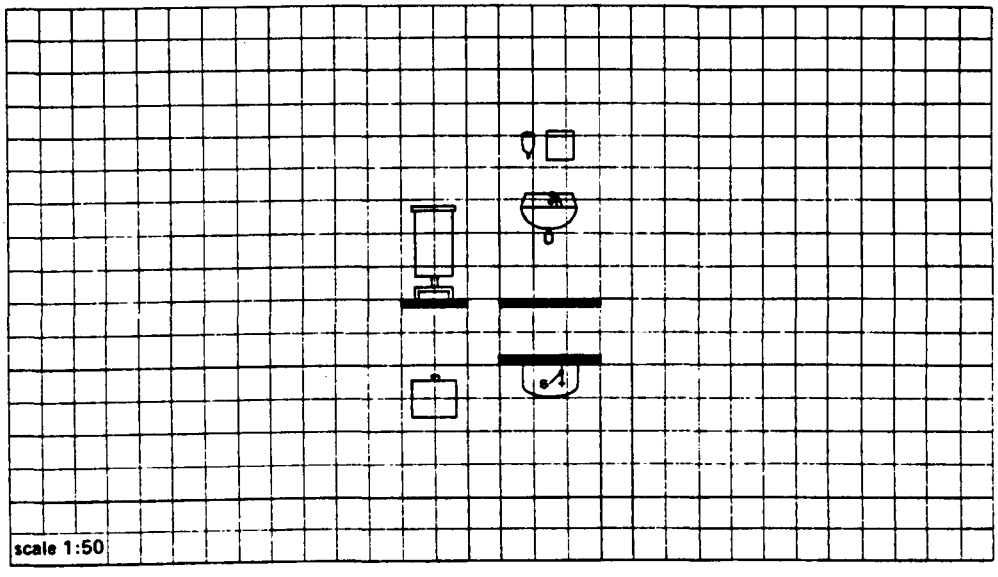
DESIGN CHARACTER

INTERNAL FINISHES	WALLS	FLOOR	CEILING
GRADE	5	3/6	5
SURFACE REFLECTIVITY			
DOORS	Patient/stretcher trolley access.		
IRONMONGERY			
WINDOWS	Clear, solar control, privacy control.		
INTERNAL GLAZING AND METHOD OF OBSCURING	N/A		
HATCH	N/A		

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

ADB	ACTIVITY UNIT DATA SHEET	B 27EB
ORIGIN D.H.S.		DATE NOV 1979
ACTIVITY UNIT TITLE	TOILET : Handrinse basin work area	PROJECT CODE

Activities: Handrinse facilities for use in a work area



Group	Item	Qty	Size	Ref. No.
1	Basin, small	1		
	Tap, mixer spray, deck mounted, lever action	1		
2	Dispenser, paper towel, BS 1439	1		
2	Dispenser, soap	1		TCH 600
3	Holder, sack, medium, freestanding	1		TEL 510

FIG 28
Department of Health and Social Security Activity Data Base: example of 'B' Sheet, TOILET:Handrinse basin. (DHSS,1779)

from the activity data bank, and entered into the design brief as basic data. In some instances there will not be a suitable 'A' sheet in the bank, in which case the planning team prepare a new 'A' sheet and select the appropriate 'B' sheets to provide the functional requirements of that particular activity. In other instances some modification to a bank 'A' sheet may be all that is required.

These A and B sheets do not describe design solutions but their purpose as stated by the DHSS (1980) is to,

> '... make the indentification of design requirements by the planning/design team and the subsequent interpretation of these design requirements less time consuming, more accurate, more reliable, and more consistent with general practice and current guidance. It has to be emphasised that the plan-ing/design team still carries the responsibility for ensuring that the requirements shown or implied in the data sheets accord with the operational policy'

Cost and area constraints have to be kept in mind by the planning team when identifying requirements by the selection or preparation of A and B sheets. The full effect of these are not apparent until the design stage which may result in some revision of requirements. When all the A and B sheets have been selected or prepared for each activity space, they

are normally put together in a departmental set which is attached to, and completes the design brief which comprises,

a. a statement of function content and current cost and area limits,

b. an operational policy, including a schedule of activity spaces,

c. a set of A and B sheets.

Activity Data is now used by the DHSS as a basis of detailed design and cost guidance for the new series of Health Building Notes (HBNs) currently being issued. Each HBN contains a list of ADB sheets related to the department concerned. The ADB material is used by the DHSS for work on exemplar design solutions on which reasonable economic cost allowances can be based, taking into consideration present practice. It is considered that in broad terms this basis of costing will permit a project team to consider solutions which embody some changes in practice.

The DHSS has considerable confidence in the ADB method and suggests (DHSS, 1980) that if it is widely used the 'A' and 'B' sheets will,

'... make a significant contribution to:

a. better health building design by providing greater facility for -

i. the accurate identification of detailed design requirements at the briefing stage in a form which can be readily translated into design layouts,

ii. the identification and examination of design options at the design stage,

iii. the recording of data for commissioning and evaluation,

iv. consistent standards of provision.

b. greater efficiency and economy in the use of source professional and technical recources particularly at the briefing and design stages by -

i. reducing the man hours required for each stage,

ii. reducing the possibility of changes in decision (or failure to make a decision) at one stage in the project process, giving rise to disruption and abortive work in subsequent stages.

Many health authorities now utilise the DHSS activity data both as an input to the brief in projects such as Nucleus hospitals or non-standard hospitals and departments,and also when planning smaller upgrading schemes for existing buildings. But the DHSS method by itself provides a vehicle for expressing user requirements only at activity space level. It is regarded as complimentary to other guidance such as Health Building Notes, Equipment Notes and Technical Memoranda together with National and Regional Health Authority policies. In order to select appropriate activity data, it is necessary to formulate clearly defined operational policies such as to provide the bridge between the overall broadly defined functional content of the building scheme and the specific user activity space requirements. The method of achieving this by means of a logical systematic approach is the important gap in the system which Part 3 of this work will attempt to fill.

Australia

6.6 An action sequence for Health Facility Planning

In 1976 the Department of Construction of the Commonwealth Government of Australia acquired a set of DHSS Activity Data sheets. At a meeting of State Government representatives in Melbourne that year, a preliminary report was considered (HFSB,1976) on Planning and Information Systems for Health facilities prepared by the Hospital Facilities Services

Branch (HFSB) of the Department of Construction. To further the development of these systems it was agreed at the meeting that studies would be undertaken of the DHSS Activity Data to determine its possible use in Australia. The objectives of the studies were stated at this meeting (HFSB, 1976) to be,

'- To fully test the viability of the British Activity Data sheet as a vehicle for tranference of information during briefing (at room level).

- To determine the extent of adaptation necessary to align the British data with Australian custom and practice.

- To determine the amount of commonality between the various Australian authorities at activity space activity unit levels.'

Twelve projects, at an appropriate stage of planning for inclusion in the studies, were subsequently selected and nominated at meetings held in each of the Australian States.

The HFSB found that DHSS Activity Space Data at room level provided an acceptable basis for the development of material suitable for application in Australia. Some adaptation was necessary, however, for example in one Australian scheme a

total of 82 'A' sheets was used, 61 of these being DHSS sheets, of which 55 required some change, the remaining 21 being created specifically for the project. (Figs 29 and 30).

In terms of data required at room level the development of Australian Activity Space sheets created a similar facility to that offered by the DHSS Activity Data. It was decided that the link between the broadly defined functional content of building schemes and room data would be achieved by recognising more levels of activity into which the information can be packaged, ie whole facility, departmental, activity group, activity space and activity unit. This approach; giving an example of a whole facility, data sheet is illustrated in Fig 31.

This concept of packages of data from whole facility level down to activity unit level appears attractive in its simplicity, because it offers the possibility of capturing 'chunks' of structured data on to data sheets (or the like) which can be coded, and thus offer facility for both manual and computer handling. What it cannot do however, is to cope with the variety of opinions at the various levels which from the British point of view need to be considered in whole hospital planning, eg particular policies. This observation was made in an assessment of the proposed Australian method in an internal minute at the DHSS (Brigden, 1977) which stated,

DEPARTMENT OF CONSTRUCTION	ACTIVITY DATA BASE SPACE DATA SHEET	S
PROJECT CANBERRA HOSPITAL		H.I.F Code
DEPARTMENT ACCIDENT AND EMERGENCY		1 2 W 5 3 3 5 5 Z 4 5 6 Q G 1
ACTIVITY SPACE NAME Dirty Utility	ROOM Nos (if applic) Lift	

ACTIVITIES to be performed in workflow sequence or order of priority.

1. Storage of working supplies of bedpans, urinals, vomit bowls and sputum containers.
2. Preparation of above items for distribution to patients.
3. Setting-up specimens of urine etc. for examination, testing and/or laboratory investigations.
4. Measuring urine volumes, testing specimens, recording results and disposing of tested material.
5. Disposing of contents of drainage bottles and cleaning empty bottles.
6. Cleansing trays, up to 3 trolleys and other equipment used in clinical procedures
7. Temporary holding of all materials requiring disposal or re-processing e.g. CSSD returns, dressings, linen etc.
8. Handwashing.

PERSONNEL Up to 3 staff.

ACTIVITY SPACE RELATIONSHIPS with adjoining or complimentary spaces.

⟶ Direct.
– – → Indirect

Central position with A & E area with direct access to both the Casualty treatment area and Emergency Resuscitation area.

Easily accessible from O.P.D.

AREA ALLOCATION (for project specific purposes only)

ACTIVITY UNIT RELATIONSHIPS within the activity space. ⟶ Direct – – → Indirect

ACTIVITY UNIT SELECTION

TECHNICAL DESIGN DATA

Service	Guideline	Requirement or Amendment.
Airconditioning	S 003	16°C
Ventilation	S 004	MECH 5/HR
Air Filtration	SAA 1342	Type 3. Class D
Exhaust Air		Incinerate before discharge.
Space Pressure.	S 003	
Noise		NC 45
Lighting	S 101	Service from floor above
General Power	S 105	
Special Power	S 107	
Patients Electrics		Class A area.
Commun. & Alarm.	S 109	S 110, S 111 also apply 3 phones.
Patient Entertainment.	S 1 x 4.	
Water	S 12 : S24	
Medical Gases	S008	
Safety		SAA 1196 applies
Special Fire Req't.		Hydrogen from battery cup'd.

ROOM DESIGN CHARACTER

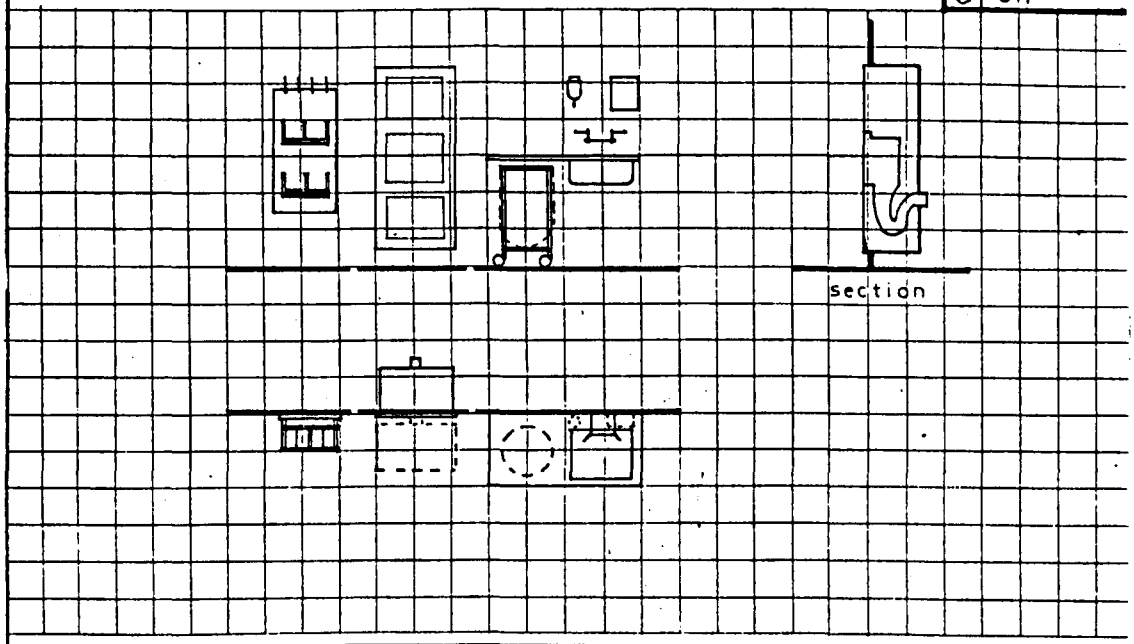
Internal Finishes.	Walls	Floors	Ceilings
Doors			
Ironmongery			
Windows			
Glazing & Locking			

FIG 29
Australian Briefing Method: Example of an Activity Data Sheet (Hospital Facilities Service Branch, Victoria, Australia, 1976)

DEPARTMENT of CONSTRUCTION	ACTIVITY DATA BASE UNIT DATA SHEET	U
ACTIVITY UNIT	DISPOSAL BED PAN SANITISING	

H	IF CODE
1	
2	
3	
4	
5	HP 6
6	OH

activities: Facility for flushing, sanitising and holding of bed pans, urinal bottles and other utensils.



equipment

group	item	quantity	size	notes
1	bed pan sanitiser, built in or cabinet type	1	1470 X 560 X 440 mm	
	bed pan and urinal bottle rack	1	1000X 500mm	
	sink stainless steel, taps, wall mounted, elbow action, h or c	1	1200 X 600mm	
	dispenser, soap	1		
2	dispenser, paper towel	1		
3	trolley, soiled linen			

services

steam
cold water
hot water
flusherline
soil waste
vent
electrical

FIG 30
The Australian Briefing Method: Example of a 'B' Sheet.(Hospital Facilities Service Branch, Victoria, Australia, 1976)

DEPARTMENT OF CONSTRUCTION | ACTIVITY DATA BASE WHOLE FACILITY DATA SHEET | F

PROJECT | H.I.F. code

FACILITY TYPE: DISTRICT GENERAL HOSPITAL

SCOPE:

FUNCTIONS by service category:

1. Patient care category (ie those services which provide nursing care)
   a) inpatient care services will provide for adult acute (medical and surgical), maternity and paediatric cases. Cases including renal dialysis and neuro surgery are specifically excluded.
   b) outpatient care services will provide specialist consultation and accident or emergency treatment
2. Medical support category
3. Non-medical support category
4. Education category
5. Amenities category

ORGANISATIONAL POLICIES

PATIENT CARE CATEGORY: patient care services will be organised under a Director of Nursing. Discreet organisational units, under Assistant Matrons will be created for acute, maternity, paediatric and special inpatient care, and for specialist consultations and accident/emergency out patient care.

Admissions and discharges will be the responsibility of the medical division.

Existing ambulance services will be organisationally linked to the Accident/emergency service

Inpatient bed occupancy levels will be 85%. and units should aim to operate on shared-bed basis to maximise service.

MEDICAL SUPPORT CATEGORY:

NON-MEDICAL SUPPORT CATEGORY:

ORGANISATIONAL POLICIES (cont.)

EDUCATION CATEGORY.

AMENITIES CATEGORY

WHOLE FACILITY

DEPARTMENT SELECTION

TITLE	CODE
general acute	
maternity	
paediatric	
outpatients	
accident and emergency	NSZ 60
X-ray	
pathology	
operating theatre	
physiotherapy	
occupational therapy	
catering	
supply and disposal	

FIG 31
Australian Briefing Method: Example of Whole Facility Data Sheet (Hospital Facilities Service Branch, Victoria, Australia, 1976)

'The narrative aspect of the Australian documents (even though I recognised there would be data sheets similar to samples of those attached), led me to regard the data as guidance rather than a specific selection of all options which should be considered when generating the brief. For example, in one section there is an instruction to determine the operative policies of each department using the principles established in 1.1.3(d) (Fig 32). However, although examples of content are given, the full range of options to be considered are not spelled out as we would wish.'

Since 1977 the Australian method has been developed further, for example the data on the 'A' and 'B' sheets has been transferred to a range of sheets, one sheet being exclusively designed for the user, excluding building professional considerations. In the extension to various levels of consideration above activity spaces, the concept of departments has been dropped in favour of a concept of services to be considered at two levels. However, the approach remains wedded to data sheets for each level and does not appear to encourage the user (preparing contributions to the brief) to consider most of the known options, and does not offer the facility to add his own where appropriate. In short, it ensures that no new ground will be broken.

Policies related to transport, communications, supply and disposal, etc. between the facility and related services external to the site.

(f) Refine and expand each service provision following the whole facility relationship, management and organisational decisions.

e.g. Refine the number of beds by patient type and dependency rating.

Refine the number of outpatient visits projected per session.

(g) Summarise and co-ordinate all decisions to confirm the provisions necessary to satisfy the intention and scope of the facility services.

1.1.3 Determine the departments, or organisational units, to be established within the facility

(a) List, notionally, the departments (see Appendix A) required to satisfy the provision statement.

(Note: These are organisational units only and will not necessarily have a significant space allocation, e.g. the housekeeping department may only have small cleaners rooms scattered throughout the facility.)

(b) Determine the major functions of each department.

e.g. General Acute Nursing Department:

- 24 hour nursing care of patients.
- Treatment of patients.
- Patient accommodation needs.

X-ray Department:

- Taking of X-rays.
- Reporting of X-ray findings.

Catering Department:

- Cooking and serving of meals.
- (Preparation will not be done as food will arrive ready to cook).

(Note: Ensure at this point that all services required are provided for.)

(c) Determine the organisational relationships between departments and the general environmental requirements of each department.

e.g. Describe the organisational links between the Nursing Education Department and the General Acute Nursing Department, between the X-ray Department and the Operating Department, etc.

Outline special air conditioning requirements of the Operating Theatre Department.

(d) Outline the management and organisational principles of each department.

e.g. With reference to 1.1.2 (e), develop management and organisational statements for each department, including whether they are to be centralised or dispersed organisations, i.e. housekeeping will generally be a dispersed department, the Operating Theatre Department will be centralised but have an outpost in the Accident and Emergency Department.

(e) Determine the workload on each department.

e.g. From needs analyses determine the number of functional units (see Appendix A) required for each department.

(f) Summarise and co-ordinate all decisions regarding departments in order to confirm or modify the department list compiled in (a) above.

1.1.4 Consider the inter-actions occurring in the facility and establish, in principle, systems to expedite them

(a) Define the types of inter-action which occur, both between parts of the facility and between the facility and services external to the site.

e.g. The flow of stores, equipment, people, vehicles.
Communications in the form of telephone, mail, computer displays.
Building services such as power, disposal systems, water, air conditioning, piped gas.

(b) Establish principles and policies for the systems to be adopted.

e.g. Segregation of people and goods.
Labour or equipment intensive systems.

FIG 32
The Australian Briefing Method: example of the narrative on departments or organisational units.(Hospital Facilities Service Branch,Victoria,Australia, 1976)

South Africa

6.7 Briefing and Design Guides

The National Building Research Institute, Pretoria (NBRI) is developing a format for a new series of briefing and design guides for health care facilities in South Africa. In the Preface of the first document in the series which provided data for Nurses Residences, the objectives of devloping the new format (NBR1, 1980) were stated as being,

> '... firstly the rationalisation and simplification of the planning process, by the structuring of a logical sequence to be followed through the project from initial planning decisions regarding the number of residents and type of accommodation required, to design information on the individual spaces within the residence, and secondly, the development of an address system to enable ease of reference and the rapid retrieval of data stored.'

The original intention was that the briefing and design guides would be used as a checklist of items that should be included in the design brief for a normal building project, and that a planner would write an original set of designers instructions using the checklist as a basis. However, it was considered that planners did not have enough time to write a comprehensive brief for every unique building project; what

they wanted was a standard set of instructions which they could hand to design consultants. Theirs was the view that it was not possible to formulate such standard data which could be generally applied, and therefore for each building or department type a set of two documents would be provided to cover every situation.

The set of two documents produced by the NBR1 consisted of a Standard Design Guide which contained standard planning, design and building data related to the specific building/ department/space; and a Briefing Guide which comprised a checklist of questions requiring unique decisions, and where available, alternatives or data which would aid decision-making. The preface of the document (NBRI, 1980) stated that,

> 'The planner will use the briefing guide to aid the compilation of a Schedule of Requirements which will describe the unique requirements of his project. On completion this would be forwarded to the Works Department who may want to add their specific project requirements before handing both the Schedule of Requirements and the Briefing Guide - which combines in a new form the Designers Instructions - to the design consultants.'

It was intended that the documents would be stored in computer form to enable easy revision and the rapid addition

of new, or the exclusion of old data. For example it was thought that if a standard solution was found as a result of using the Briefing Guide, then this could be transferred to the Standard Guide and the organisational problem set out in the Briefing Guide would be omitted in subsequent revisions. The NBRI were of the view that much building data not included in the documents might in due course, be usefully added to the Standard Design Guide, as and when the information became available. It was suggested (NBRI, 1980) for example that,

> '... new data could include standard finishes, door furniture, fire fighting equipment etc. The documents have been structured to admit new data at an appropriate address where reference and retrieval can easily be made.'

The structures of the two documents are described as compatible with each other so that decisions made in the Briefing Guide can be directly related to guidance in the Design Guide. For example Figure 33 illustrates the way in which the narrative in the Design Guide is translated into decisions. The examples given show the sort of organisational information which the user needs to provide as part of the brief. But, before these organisational aspects are fully explained, the briefing guide launches into the consideration of design data and area cost guides (Fig 34). Immediately after this engineers data is given prominence followed by activity and accommodation requirements (Fig 35).

FIG 33

(01)1 PURPOSE OF THE RESIDENCE

State whether the Residence required is for a hospital, nurses' training college or both.

(01)2 DESCRIPTION OF THE RESIDENTS
List which of the following categories of hospital and residence staff require accommodation. The numbers of resident hospital staff will be shown under (03) while residence staff will be fully covered under (06).

Student nurses
Student paramedicals
Qualified nurses
Qualified paramedicals
Sisters
Matrons
Residence staff -
  Housekeepers
  Home sister/warden
  Domestics
Other

(01)3 HOSPITAL/COLLEGE FACILITIES AVAILABLE TO THE RESIDENCE

Are any of the following facilities in existance at the hospital/ college and available for use by the residents or will it suit local requirements better if any of these facilities are provided at the hospital/college (new or existing) rather than at the Residence? Any facility considered should be both large enough to meet the additional load (if any) and located for convenient use by the residents.

Multi-purpose hall
Sports facilities
Dining
Kitchen
Stores
Maintenance unit
Living-out domestic staff change/dining facilities
Living-in domestic staff residential facilities
Other (specify)

(02)1 TYPE OF ACCOMMODATION TO BE PROVIDED FOR DIFFERENT RESIDENTS

The following are the policies proposed by the Provinces. State which satisfies the needs of this project or describe the particular requirements for this project.
CAPE PROVINCE
Generally accommodation for all student nurses will be provided in single study bedrooms. In some cases a proportion of this

accommodation may be provided in 4 or 6 bed dormitories. No double rooms will be provided. Qualified staff will be housed in single bed-sitting rooms and matrons and lady wardens in either one or two bedroomed flats.

ORANGE FREE STATE
Student nurses will be accommodated in either double or single rooms. No dormitories will be provided. Qualified nurses will be housed in either single or bed-sitting rooms. Matrons and lady wardens may be housed in either bachelor, one or two bedroomed flats.

TRANSVAAL
Student nurses will be accommodated in either double or single study bedrooms. No dormitories. Qualified nurses will be accommodated in single or bed-sitting rooms. 30 Per cent of the rooms for qualified nurses are to have en-suite bathrooms. Matrons and lady wardens (home sister) are to have one bedroomed flats with a combined dining/ living room. Matrons in charge of small hospitals are to have a one bedroomed flat with separate dining and living rooms while a matron in charge of a large hospital is to have a similar but two bedroomed flat. Where the hospital concerned is a training hospital, the matron in charge is to have a study in addition to the flat type described above.

(03)1 NUMBER OF RESIDENTS TO BE ACCOMMODATED

The number of residents at a nurses' residence may be derived from the number of hospital beds by using the following formula (in use in the Orange Free State):

1. Total number of nursing and paramedical staff at the hospital (A) = 1,2 x hospital beds.
2. These nurses can be grouped into the following categories and proportions:
   2.1 Student nurses - 40% x A
   2.2 Qualified nurses - 40% x A
   2.3 Paramedicals - 20% x A
3. Accommodation is provided for the following proportions of each category:
   3.1 Student nurses - 100%
   3.2 Qualified nurses - 25 - 30%
   3.3 Paramedicals - 25 - 30%

The above figures should be adapted to meet local circumstances, e.g. the amount of accommodation available in the community; whether a small town (where qualified staff are more likely to be married and not requiring accommodation). As more outside accommodation is usually available to the white nurse, the lower figures are usually used in determining their accommodation requirements.

In Natal accommodation is generally provided for all student

Staff member	Estimated total staff requirements	Number required to live-in	Type of accommodation to be provided
Residence warden/ home sister			
Housekeeping			
-housekeeper			
-domestic			
Receptionist			
Religious counsellor			
Public Relations Off			
Recreation Officer			
Catering			
- dietician			
- chef			
- domestic			

NOTE: Residential Accommodation for all hospital labourers and domestics is usually provided centrally. This is covered under the classification 491.000.000. Separate provision made at the residence is covered under 481.580.000.

(57)1 NATURAL OR ARTIFICIAL VENTILATION OR AIRCONDITIONING

The use of artifical ventilation or airconditioning will only be considered in exceptional circumstances. Buildings should be so designed as to make full use of natural ventilation techniques. The accompanying map - paragraph (57)2 page 19 gives guidelines to the areas in Southern Africa where additional measures may be justified to maintain an effective temperature of 23,5 deg. C air temperature where a heavy weight structure is used (walls more than 270 mm thick, limited window area and heavy weight insulated roof). Establish requirements in consultation with Works Department.

(58)1 WHAT PROVISION MUST BE MADE FOR TV AERIALS

The following alternatives are available: Alternatives 1 and 2. Provide conduiting for connections to certain specified rooms (refer to individual space descriptions). The aerial system may be for installation as part of the building contract (alternative 1) or for later installation (alternative 2). Alternative 3. No provision is to be made for connection to a communal aerial.

(58)2 COMMUNICATION SYSTEM BETWEEN HOSPITAL AND RESIDENCE

State whether any such system is required for this project.

(93)2 PROJECT AREA GUIDE LINES AND COST LIMITS - TABLE 1 : NEW WORK

Date: February 1980 Revision: Cost base: January 1979, Pretoria

1. A. Department or facility : BACHELOR FLAT
   B. Space classification groups included: 481.121.000
   C. Planning unit (P.U.) : Resident
   D. TOTAL NUMBER OF P.U.'s REQUIRED : _____
   E. Maximum area guide : 32 m2/P.U. gross
   F. PROJECT AREA GUIDE = DXE : _____m2 gross
   G. Norm cost limit : R5 450 /P.U.
   H. PROJECT COST LIMIT = DXG : R_____
   I. Notes and spaces included:
   Flat comprises bed-sitting room, bathroom and kitchenette

2. A. Department or facility : ONE BEDROOM FLAT
   B. Space classification groups included: 481.122.000
   C. Planning unit (P.U.) : Resident
   D. TOTAL NUMBER OF P.U.'s REQUIRED : _____
   F. Maximum area guide : 55 m2/P.U. gross
   F. PROJECT AREA GUIDE = DXE : _____m2 gross
   G. Norm cost limit : R9 350 /P.U.
   H. PROJECT COST LIMIT = DXG : R_____
   I. Notes and spaces included:
   Flat comprises bedroom, lounge/lining kitchenette, bathroom and secondary circulation

3. A. Department or facility : TWO BEDROOM FLAT
   B. Space classification groups included: 481.123.000
   C. Planning unit (P.U.) : Resident
   D. TOTAL NUMBER OF P.U.'s REQUIRED : _____
   E. Maximum area guide : 75 m2/P.U. gross
   F. PROJECT AREA GUIDE = DXE : _____m2 gross
   G. Norm cost limit : R12 750/P.U.
   H. PROJECT COST LIMIT = DXG : R_____
   I. Notes and spaces included:
   Flat comprises one bedroom, one bedroom/study, lounge, dining, kitchen, bathroom, secondary circulation and entrance

4. A. Department or facility : THREE BEDROOM FLAT
   B. Space classification groups included: 481.124.000
   C. Planning unit (P.U.) : Resident
   D. TOTAL NUMBER OF P.U.'s REQUIRED : _____
   E. Maximum area guide : 110 m2/P.U. gross

FIG 35 South African Briefing Guide: Engineering data and Accommodation Requirements. (National Building Research Institute, Pretoria, South Africa, 1980)

(5511 FACTORS AFFECTING THE GROUPING OF FLATS AND CLUSTERS

State any specific requirements for this project regarding the grouping of flats and clusters with respect to their allocation to different grades of staff according to seniority, qualification, experience, age or social standing.

(5611 SPACE HEATING

The following are the standard provincial policies regarding the provision for space heating in bedrooms. The appropriate policy has been included in the Provincial STANDARD DESIGN GUIDE. If this does not fulfill the requirements for this project state the specific requirements in the SCHEDULE OF REQUIREMENTS.

CAPE PROVINCE: Provide 15a socket outlet for later (ex-contract) installation of wall mounted asbestos panel heaters.

NATAL: Provide either for electrical panel heaters (built-in, no plug) or steam radiators depending on local conditions.

ORANGE FREE STATE: Steam radiator.

TRANSVAAL: Steam radiator.

Loose plug-in bar heaters may not be used in staff residences. Hot water or steam radiators while making use of energy normally available on site are not individually adjustable and are throughout the heating season. Conversely electrical panel heaters, while individually adjustable, are dependent on an external energy source.

(7112 ACTIVITIES AND ACCOMMODATION REQUIREMENTS

The following table lists the activities usually catered for in a three bedroom flat as well as the spaces or rooms in which these activities normally occur. Check that these recommendations are acceptable for this project. This table also appears in the STANDARD DESIGN GUIDE and need not be repeated in the SCHEDULE OF REQUIREMENTS unless specific amendments are required. Allowance has been made in the table for several alternatives (e.g. lounge/dining as one or two spaces and the bathroom as one or more spaces) but the project requirements set should not be excessive as the cost limits set in 481.000.000(90) should be met.

CLASSIFICATION	ACTIVITIES	SPACE	NOTES	PROJECT REQUIREMENTS
481.124.111	Sleeping, dressing, storage	First bedroom		
481.124.112	Family (guest bedroom: sleeping, dressing, storage, ironing	Second bedroom		
481.124.113	Family/guest bedroom: sleeping, dressing, storage, ironing, study: working at desk storage	Third bedroom/ study	Note project requirements in SCHEDULE OF REQUIREMENTS	
481.124.131	Relaxation, entertaining, storage	Lounge	May be separate from or combined with dining. State specific requirements in the SCHEDULE OF REQUIREMENTS	
481.124.132	Dining, storage	Dining		
481.124.141	Food preparation, storage, washing-up laundry	Kitchen		
481.124.150	Ablution and toilet function hand laundry and drip drying	Bathroom	May be provided in one or more spaces Note project requirements if more than one space in SCHEDULE OF REQUIREMENTS	

This method is one of the first which attempts to approach brief making in a systematic manner, but there are a number of deficiences which must be taken into consideration.

1. It was suggested that planners did not have the time to formulate a comprehensive brief, and therefore the solution of standard instructions by testing or quantifying options in the Briefing Guide would suffice. Yet the introduction to the document (NBRI, 1980) assumed that the planner would be 'conversant with the standard operational policies, design requirements and standards set out in the Standard Design Guide' (205 pages). It would have seemed more appropriate to include sufficient information for the 'user' in the Briefing Guide to avoid reliance on the Design Guide.

2. The Briefing Guide tends to jumble 'design' or 'engineers' decisions with 'user' decisions rather than to concentrate initially on organisational aspects which can then lead the designers to interpreting these requirements in technical and design terms.

3. The document is not easy to follow, particularly for inexperienced users who are likely to be the majority in the future. The way in which the decisions are set out could encourage either a shopping list approach or the selection of these administratively by one person rather than a project team.

4. The method seems to be geared more to standard solutions rather than presenting options (within certain cost constraints). It is in a format which is not likely to encourage discussion and consideration of alternative options for a project by a planning team. However, as an aid to designers it seems to provide a useful means of assembling technical data for designs if that is what designers need to know all at once. But for the user it does not encourage careful consideration or organisational aspects and the selection of options which may lead to the most flexible and economical solutions.

7. FURTHER DEVELOPMENTS

7.1 A briefing framework

It is evident from an initial assessment of the systems described in section 6, that to be successful such a proposed method should enable efficienct management of the briefing process; be simple to use, initially manually then possibly by automatic data processing techniques; not demand more time to prepare the user input to the brief; and should not confuse 'design' or 'engineering' decisions with 'user' decisions, but should concentrate on organisational aspects which help to identify and quantify the accommodation to be provided.

Further, the method should not be designed in such a way that it is necessary to rely upon a particular group of experienced planners to make it work. It should be possible for project teams to benefit from the wide planning experience which could be built into such a method. There would be the need to develop documents which are easy to follow and also encourage logical progress through decisions which need to be made, providing links to previous and subsequent decisions.

Some of the other criteria which should be taken into account, not necessarily in order of precedence would be:

- possible reduction of the translation of material from one form to another and the amount of paperwork generally generated by a building project;

- the inclusion of identifiable planning options open to a project team at any stage in the project, without recourse to other scattered material, thereby minimising referral to other guidance documents;

- the information presented on briefing should be related to other information systems;

- the avoidance of creating a straight jacket or limiting innovation in design by architects which might otherwise result in other professionals playing architect;

- the ability to accommodate future changes or alternative options suited to local needs, flexibility;

- the avoidance of misinterpretation of the brief by use of diagrammatic explanations;

- the provision of a logical method of recording decisions;

- the provision of a planning and design tool which enables the consequences of particular option selections to be traced;

- manageability, avoid the difficulty of handling large flow charts;

- simple to use;

- enable the incorporation of graphics to convey some particular option;

- ease of transfer to a computer based system.

Developing these criteria further enables the construction of a theoretical framework against which the various briefing methods can be assessed, ie.

- Simple to use/manage

- Client user requirements stated clearly and concisely

- Enables planning implications of decisions being considered to be highlighted

- Enables compatibility with previous decisions to be checked

- Enables possible identifiable choices of planning decisions to be considered

- Minimises referral to other guidance material

- Briefing information compatible with other information/guidance systems

- Part of a systematic data chain

- Accommodates choice of alternative options not contained in documentation

- Enables incorporation of graphics to convey a particular option

- Enables whole hospital policy considerations to be taken into account

- Is not prescriptive

- Does not assume a standard design solution

- Reduces the amount of paperwork in briefing

- Reduces the amount of conventional minutes of project team

- FLexible in use.

(The reasons for selecting these questions, which can be set out in the form of an evaluation matrix are discussed on page 226).

Taking this into account, at first sight it may appear that planning of health care buildings should be no more complex than any project which encompasses the accommodation and facilities required for a commercial, scientific or technical service. But there is a difference, for in Health Service Planning a very wide range of multi-user interests need to be considered at every stage, which adds a dimension not always

found in other situations (page 34). For example, in planning a film processing laboratory, the overall laboratory objectives and operational policies would be the receiving, processing, and dispatch of photographic films and photographic prints of various categories. Generally this could be planned on a linear-flow production system. Although some parts of the laboratory would need to be designed for specialist activities, the method of production and facilities required to meet customer needs fit into an overall system, and could be specified by one authorative client/user, ie the owner/management board. Other-user consultation if undertaken will be considerably constrained by the overall system, and limited to input from supervisors in specialist parts of the laboratory who would concentrate on measures for productivity and profit. Although the design and installation of processing equipment would require very detailed technical planning the preparation of a brief is relatively straight-forward.

On the other hand briefing and planning health care buildings such as hospitals is considerably more sophisticated. Although the overall objectives of the investigation, are care and treatment of patients, the extent and range of activities associated with this are extremely complex.

Even in overall operational terms there can be some dicotomy between clinical and management objectives which need to be resolved. Some sections or departments may be managed by

medical clinicians, others provide a service for medical clinicians and are managed by nurses or para medical staff, yet others are managed by technical or specialist staff who provide services for each department in the whole hospital. Often activities in one department may affect every other department in the hospital, eg catering, domestic services and supplies. Additionally, in the NHS, profit and loss measures are missing, and this make it almost impossible to make a meaningful comparison with commercial, scientific or technical services.

Because of this, a multi-user input to preparing a design brief for health care buildings is essential. First, there is the need to take into account such factors as the perceived user requirements, various alternative planning options and the implications of providing these, balanced against economic and cost constraints. Second, no building project proceeds as a series of linear tasks, constant back tracking is necessary to previous decisions when preparing the user input to a brief, together with projection to decisions which have not yet been considered. The net result is the development of a series of conceptual leaps during the briefing and design stages during which the original brief is modified and refined to take cognizance of the changes proposed. Third, a smooth briefing process is not helped by the inexperience of project team members. This has already been discussed in detail in previous parts of this work when referring to the appointment of a project team, which 'does

not necessarily guarantee adequate, well considered multi-user input to planning' (page 46). The 'proxy users' even though highly qualified in their own professional field may be amateurs in the 'planning game' and removed from practice by a number of years, also it may be their first and only involvement in a project of any magnitude.

It could be argued that this multi-user involvement in briefing is self defeating. Too much information can create considerable confusion; there is an element of truth in the proverb that 'too many cooks spoil the broth'. Even so, too little or inaccurate information is equally unacceptable. Multi-user consultation if efficiently managed should result in a much improved brief and a better understanding by the designer of the way in which the building is intended to function. Care needs to be taken, however, that primary objectives ie efficiency and economy, are not overlooked.

It is perhaps for these reasons that previous attempts to develop universally acceptable briefing procedures have achieved only a varied measure of success. If the methods had always been applied by experienced planners then their value may have been enhanced. But this is not really practicable and there is a need to approach the problem in a more simplistic manner.

What is required is a decision framework which would guide a project team through the options which need to be considered

when formulating the brief. The method would need to identify the background information and guidance relative to the options being considered, and present it in an easily assimilated manner without the necessity for the project team to constantly refer to innumerable documents or papers which generally is the case at present. It would also have to ensure that main aims and objectives were constantly taken into account.

For the special needs of health care buildings such a method would ideally need to be applied in concept to different levels of decision making, ie

a. Strategic and operational service planning: Encompassing the higher level decisions relating to a proposed building scheme which need to be in a form suitable for direct input to the lower levels of whole hospital (or health building) and departmental planning. It is a translation of service planning objectives into project functional units.

b. Whole Hospital: The specification of whole hospital or health building operational policies, ie statements of intent on those matters which affect all, or most of, the project under consideration. The first of these being concerned with content arising from the assessment of need, which is a product of the health service planning activity. The next group of decisions are

those which link up to give consistency to and cohesion with a number of widely disparate activities and which indicate possible groupings of related activities. In planning terms there is the need to identify measures of efficiency which are directly or indirectly related to the use of resources. For example, studies of the utilisation of space throughout the hospital in so far as it identifies spatial requirements. This may result in management or organisational changes to meet the proposed requirements.

c. Departmental: The specification of project team (client/user) requirements, establishing operational policies for the organisation of an individual department/unit/section and, after careful consideration of these and other planning alternatives the eventual selection of a schedule of activity spaces previously known as a schedule of accommodation.

The first two parts of this work attempt to argue the case that current methods used to elicit and organise the user input to a design brief are either haphazard or inefficient or both and therefore incomplete. Further, many of the methods attempted more recently, although based on a structured approach are also either incomplete or too restrictive. They do not provide the information necessary to produce a comprehensive, well considered statement which satisfies user requirements without unduly constraining the

creativity of the designer. Little attempt is made to take into account the 'real world' constraints of capital and revenue monies, energy, time etc; these things are not constant.

Further it is argued that because these methods have apparently failed, it does not necessarily follow that a systems approach is wrong and the final part of this work, which attempts to satisfy the demands of an evaluation framework, based on the criteria just described, will propose a new method for briefing which is applicable broadly to the three levels of decision making, described previously and set out below in reverse order from that normally adopted for a building project:-

a. Departmental

b. Whole Hospital

c. Strategic and Operational Service Planning

7.1.2 Inception

The need for a systematic approach to design briefing was identified in the CUBITH system report (DHSS, 1970) which has already been discussed in section 6.4 of this work. Of the twenty procedural sub systems described in the report (Appendix 3 and 4) it was acknowledged that,

'...some parts of the sytem were not developed completely, indeed on the briefing front the main achievement has been the production of activity data material which requires the prior formulation of opeational policies as the basis for the selection of appropriate activity spaces'

The Department undertook a feasibility study on setting up an Activity Data Base (ADB) structure (DHSS, 1971[1]) which,

'...a. will be capable in the short term of recording and documenting the Dudley Harness Project,*'

b. will facilitate a logical progression in the recording and documenting of subsequent Harness hospitals,

c. will be capable or responding, in the longer term, to possible future trends away from standard solutions,

d. will link up with parts of the ADB structure namely Activity Unit (B) sheets and Room data sheets which have been in a process of development for some time.'

---

* A new Harness prototype district general hospital at Dudley in the West Midlands. (Completed 1982)

In addition to the Activity Data sheets which have been discussed already on page , the feasibility study proposed that the preparation of a narrative brief could be achieved by the use of preprepared flow charts to record project decisions and intentions.

It was considered that the flow chart (Fig 36, page 183, Appendices 5 and 6) would be a graphic convention representing the decisions which client/users take (either consciously or unconsciously) in the preparation of a brief, and the alternative solutions on offer. These decisions it was thought would be shown in their logical sequence with interactions, highlighting where appropriate, the repetitive or 'master' nature of some decisions, by construction of decision 'loops'. In this way quite complex problems could be decomposed into a relatively simple sequence of decisions.

Two points of interest emerged from this report - the reference to all parts of the sub system as activity data, and the assumption the automatic data processing techniques (ADP) would be in general use by project teams, hence the proposal for a flow chart approach in which it was assumed that the user would be led automatically through the stages of selecting options.

In the event none of these assumptions proved acceptable, because it was perceived that the first level of the subsystem was concerned with organisational decisions which

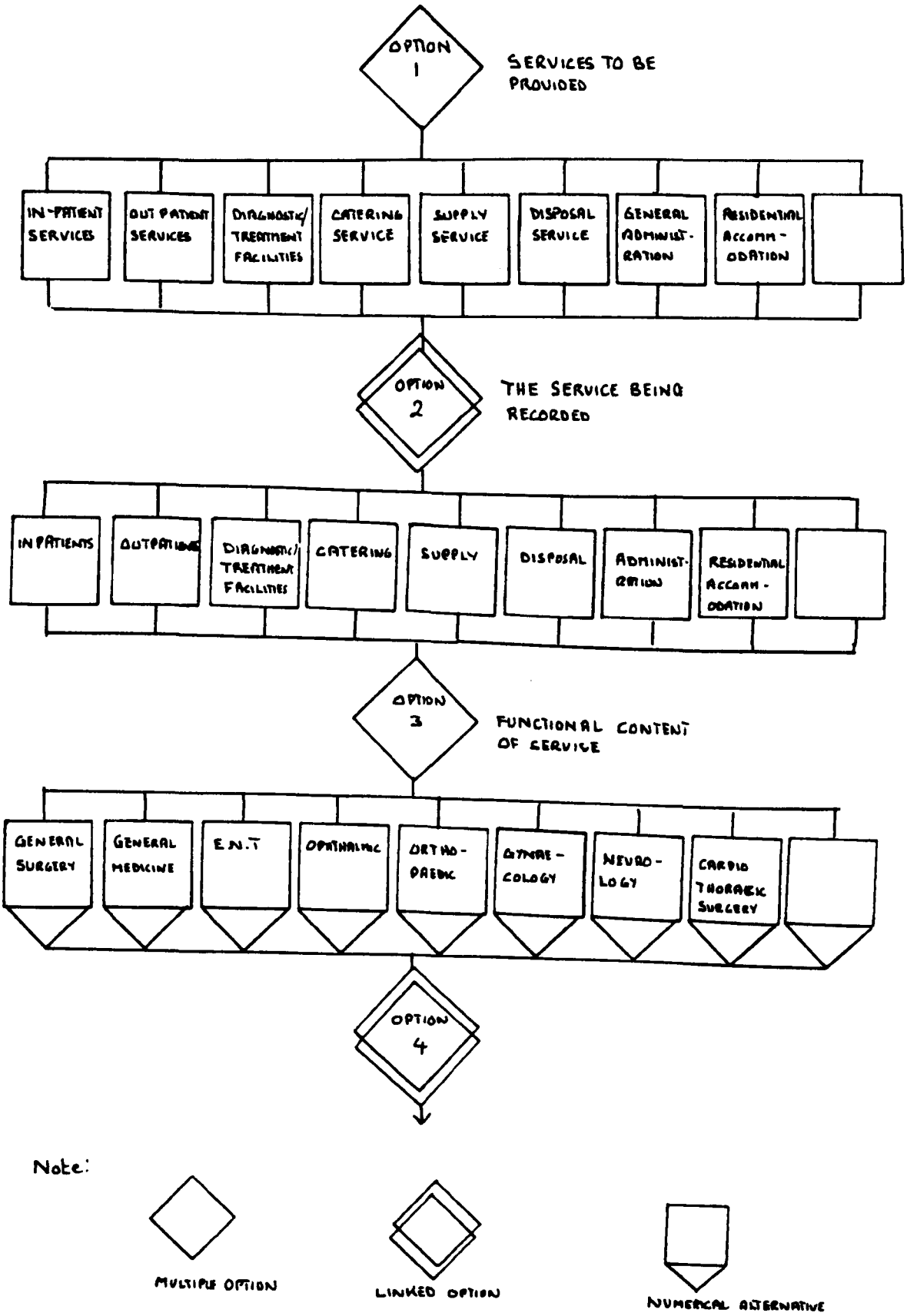


FIG 36
Data Flow Chart (beginning), for selection of Whole Hospital planning options(DHSS Activity Data Base Feasibility Study 1971)

led to the selection of activity data; resources did not permit the general introduction of ADP and the creation of a brief is not an automatic single way flow through a decision tree approach.

Further support for the application of systems and standards to health building and the development of a briefing method was given in a paper presented to the Building Development Steering Group at the Department of Health (DHSS, 1971[2]). The paper (BDSG No 13) considered that there was;

> 'An undoubted need to use improved methods of carrying out the various processes involved in the realisation of a building scheme, and in linking these processes together in a way which eliminates so far as possible the translation of material from one form to another, eg from prose to sketch designs, from sketches to detailed drawings, from drawings to lists of building compoents, or the unnecessary repetition of routine tasks.'

Furthermore, the paper regarded the scope of the Briefing Sub System to be,

> '... The process by which the client tells a designer what are his needs in terms of spaces, the activity to be carried out in them, the environmental conditions, the services and equipment required to perform the activity. At the end of the briefing stage the project

team will have available to it reasonably accurate information about the total area of the project, its likely shape and cost (capital and revenue) and a preliminary list of equipment needed, together with the estimated equipment cost.

The Building Development Steering Group approved the general thrust in the development systems set out in BDSG paper No 13 and commissioned an outside consultancy Urwick Dynamics Ltd to comment on the proposals. The Urwick Dynamics report (DHSS, 1972[2]) emphasized the importance of giving a high priority to the development of activity data, for,

'If increased use of computers is to be made to assist with the design of hospitals, activity data is necessary at all levels. Due to the computers inability to bridge, intuitively, the gap between the client and the hospital designer this data requires to be compiled in great detail and according to a disciplined format. Activity data in this form will of course be equally useful where hospitals are being designed by traditional methods .... The availability of complete activity data is extremely important if full advantage is to be taken of the computer systems connected with commissioning ... Activity data is necessary to provide a factual basis and a disciplined structure for a large proportion of the work of evaluating hospitals... The improved quality and higher volumes of activity data that will be

required in the future will make it vital to prepare this data in advance of its use on any particular project.'

The Department decided to develop the briefing sub system as part of the systems approach to health building. It was considered that this sub system could be described under an all embracing title of the Activity Data Base (ADB) and a working party was set up to check how this should proceed.

The working party agreed that ultimately the principal levels for data recording would be:

Level I

Whole hospital and major services data, ie

a. Development Control Plan, eg relationships between various departments in the completed project taking into account the phasing of building,

b. More than one major service, eg the implications of catering services for the whole hospital,

c. The general functions of the hospital, eg pattern of patient care.

A significant flaw in this approach was that data cannot necessarily emerge in this order, eg the supply policies may well determine the shape of the building.

Level 2

Accommodation Design Data (mainly concerned with all information affecting the design of individual types of accommodation required to house the services represented - hence the title), ie

a. Departmental data

b. Section data

c. Activity Space data

d. Activity unit data

The working party regarded the objectives of the briefing sub system to be to provide project teams with the activity data they required at all stages of health building, after the overall or functional content had been decided. They thought this would be achieved (DHSS, 1972[3]) by,

'... providing a structured method of storing, retrieving and using activity data from whole hospital policy level, through major services, organisations and

section levels sto activity unit data and, to provide links with other parts of the system.'

It was though that the structure of ADB could be in the form of a branching questionnaire which would initially be based on the Departments current philosophies, ie, the Harness basic brief.

An initial appraisal of the two principal levels of data recording indicated that it might be more expedient to develop the lower levels of data decisions, ie rather than commencing with the Whole Hospital. It was considered that the organisational options at the lower level would help to identify those whole hospital policy aspects which should to be taken into account at the upper level. For example, there is a need for observation beds for Accident and Emergency department (A&E) patients who have to remain in hospital for a short time, and these facilities could be provided at A&E level or elsewhere in the hospital.

It was decided further to amalgamate the four components of the proposed 'Accommodation Design Data' into two distinctly separate entities. One, the Accommodation Design Data (ADD) in conjunction with studies of space utilisation related to operational and managerial systems, would elicit user requirements and would embrace only decisions identifying the departmental and unit planning data, which would lead ulitmately to the selection of activity spaces; the other,

Activity Data Base (ADB) would be a compendium of solutions of activity space and unit data, ie the detailed components of activity spaces or rooms. Because of the urgent need to provide activity space and room data for the Harness programme and subsequently Nucleus Hospitals, it was proposed that the development of ADB be accelerated. As it happened the activity data sheets were developed for manual use (Moss 1975; DHSS, 1976, 1980) and have yet to be put into a form suitable for selection or processing by computer, or even retrieval by Microfiche.

The author decided that the principles of the Accommodation Design Data described in the Feasibility Study (DHSS, 1971) would be explored to see whether this approach offered a useful contribution to the process of design briefing.

7.2 Accommodation Design Data (ADD)

7.2.1 Decision Tree

The feasibility study on setting up an Activity Data Base (ADB) (DHSS, 1971[1]) included examples of prepared flow charts to record decisions and intentions for the ADB system. These flow charts appeared to have been designed to provide the basis for an automatic data processing procedure. It was envisaged that ideally the user would have access to a computer terminal with a visual display unit, which would enable him to progress step by step in preparing the brief,

through the various options and decision loops in the style of a decision treee. But it was thought that these flow charts could be used initially in a manual form.

In addition to the accommodation design options flow chart (Appendix 6) attempts were made to develop further examples to show how the principle could be applied to the higher levels of decisions relating to the planning of a Whole Hospital (Fig 36 and Appendix 5).

However attractive the idea of automation applied to planning may first appear, it becomes less practical and acceptable as the process of brief making is analysed. A project team charged with the task of preparing a brief is generally a disparate group of individuals. Whilst the 'proxy users' (see pages 35/36 and 48) may be experts in their own clinical or technical field, as planners their experience may be limited. Conversely the works professional members of the project team whilst being experienced 'technical' planners may have a variable knowledge of the clinical needs, and reasons behind the clinical needs expressed by the user.

The project team is a forum in which these various aspects can be debated, balancing user requirements against cost and design. This dialogue and compromise which takes place in a multi disciplinary working situation cannot be over emphasised. The notion that the team would become more

efficient and logical in the decision making process, by framing their discussions around a computerised selection process was thought to be not very practical.

Similarly, the use of flow charts in the form of a decision tree would not be much better. Apart from the difficulties of handling what could be lengthy documents, their use could stifle discussion and result in the automatic selection of options which may not necessarily be cost effective.

The author considered that an alternative approach should be adopted, which would concentrate more on a type of recording device which resulted in a statement of detailed policies for a hospital, enabling the project team to access the appropriate activity/room data sheets.

Proposals for this new method of recording briefing decisions still followed the premise that the user needed to be directed to other parts of the document to select further options dependent on the first option selected. There was doubt even at this stage whether such a proposal was feasible. It was felt that this method could result in some discontinuity in the preparation of the brief by taking decisions in isolation from other related matters on 'forward' pages necessitating considerable amendments when the same page and selection of options was reached through a different decision path.

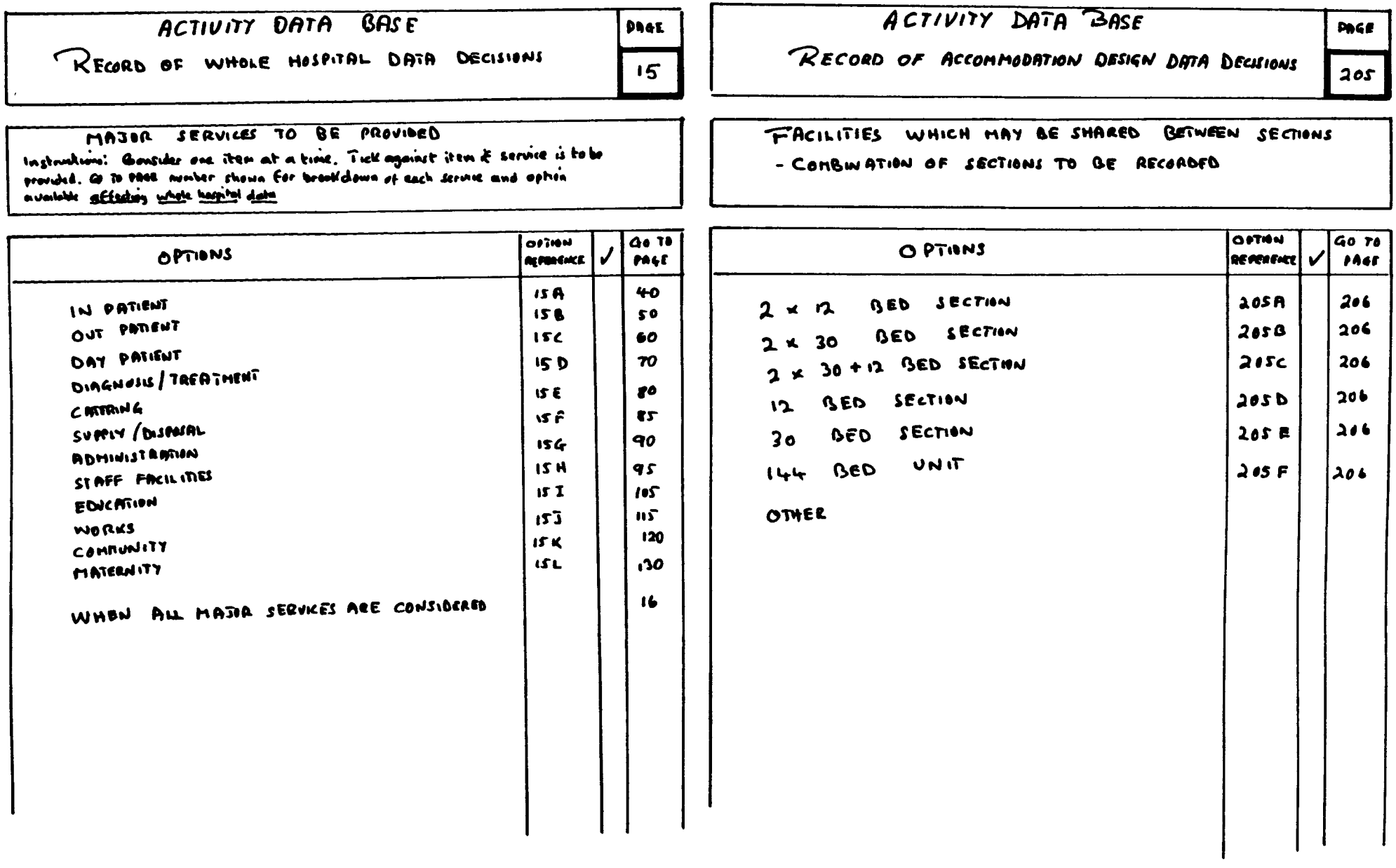
The first draft included 'Whole Hospital Data Options' as well as those which identified the more detailed Accommodation Design Data (ADD). This was to demonstrate that the same approach would be equally applicable for either. Each page of the document was to be structured in three sections (Fig 37):

A - A standard heading box with the number of the page (highlighted for easy reference) on the right,

B - A box which stated the decision or intention to be recorded and, if necessary, any special instructions,

C - The body of the page which would list the available options (with graphic aids if available). On the right of each option, a unique option reference would be given, with a page number followed by the reference of the option within the page (A to Z). This would be followed by an empty column headed / after which appears the number of the next page to be read if that option is taken.

Figure 37 (left) shows an example Whole Hospital Data Decisions page which was based on the flow chart in Figure 36 (Appendix 5) and (right) a page of ADD decisions prepared using decisions 76 and 77 of the flow chart (Appendix 6) contained in the May 1971 feasibility study report (DHSS, 1971[1]).



ACTIVITY DATA BASE

RECORD OF WHOLE HOSPITAL DATA DECISIONS

PAGE 15

MAJOR SERVICES TO BE PROVIDED

Instructions: Consider one item at a time. Tick against item if service is to be provided. Go to page number shown for breakdown of each service and option available excluding whole hospital data

OPTIONS	OPTION REFERENCE	✓	GO TO PAGE
IN PATIENT	15A		40
OUT PATIENT	15B		50
DAY PATIENT	15C		60
DIAGNOSIS / TREATMENT	15D		70
CATERING	15E		80
SUPPLY / DISPOSAL	15F		85
ADMINISTRATION	15G		90
STAFF FACILITIES	15H		95
EDUCATION	15I		105
WORKS	15J		115
COMMUNITY	15K		120
MATERNITY	15L		130
WHEN ALL MAJOR SERVICES ARE CONSIDERED			16

ACTIVITY DATA BASE

RECORD OF ACCOMMODATION DESIGN DATA DECISIONS

PAGE 205

FACILITIES WHICH MAY BE SHARED BETWEEN SECTIONS

- COMBINATION OF SECTIONS TO BE RECORDED

OPTIONS	OPTION REFERENCE	✓	GO TO PAGE
2 x 12 BED SECTION	205A		206
2 x 30 BED SECTION	205B		206
2 x 30 + 12 BED SECTION	205C		206
12 BED SECTION	205D		206
30 BED SECTION	205E		206
144 BED UNIT	205F		206
OTHER			

FIG 37
Activity Data Base: draft Options Page, Whole Hospital Data

Figure 38 gives examples of (a) a method of giving the breakdown at Major Service 'Diagnosis/Treatment' level before examining the options available at ADD level for each section; (b) showing how graphical aids could be used to help explain options without a long narrative (the example given was purely to illustrate the feature and had no actual formulation).

The proposal by the author appeared acceptable and a decision was made by the Activity Data Base Working Group (ADBWP) to proceed with the preparation of complete ADD trial documents for various hospital departments. The ADBWP also produced a paper (DHSS, 1972[4]) which set out in general the aims and objectives of the ADB briefing system. The objectives were stated to provide,

'The Data':

a. A store of all activity data available on client user requirements which project teams need to proceed from, an outline of functions and known functional content for a project, through all stages of health building from Briefing to Evaluation;

b. A potential source of information for the development of other parts of the total system;

ACTIVITY DATA BASE

RECORD OF ACCOMMODATION DESIGN DATA DECISIONS

PAGE 300

SERVICES BEING RECORDED FOR MAJOR SERVICE:

DIAGNOSIS / TREATMENT

OPTIONS	OPTION REFERENCE	✓	GO TO PAGE
DIAGNOSTIC X-RAY	300 A		305
PHYSICAL MEDICINE	300 B		320
PATHOLOGY (& MORTUARY)	300 C		330
MEDICAL PHOTOGRAPHY	300 D		340
ACCIDENT & EMERGENCY	300 E		350
SURGERY & ANAESTHETICS	300 F		360
RADIO THERAPY	300 G		370
RADIOISOTOPES	300 H		380
MEDICAL PHYSICS (CLINICAL MEASUREMENT)	300 I		390
WHEN ALL SERVICES HAVE BEEN CONSIDERED FOR THIS SERVICE			150

ACTIVITY DATA BASE

RECORD OF ACCOMMODATION DESIGN DATA DECISIONS

PAGE 500

METHOD OF SERVICING TRAYS

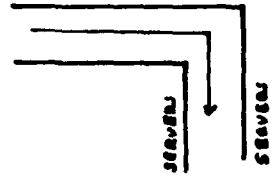
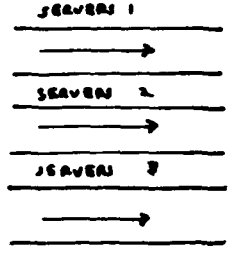
OPTIONS	OPTION REFERENCE	✓	GO TO PAGE
Method 1 ONE CONTINUOUS FLOW  	500A		504
Method 2 A NUMBER OF CONTINUOUS BELTS DIVIDED BY CATEGORY OF ITEM  	500B		501

FIG 38
Activity Data Base: draft Options Pages, Accommodation Design Data MajorServices (left), options presented graphically (right)

'The System':

A logical method of identifying requirements and recording project decisions at the briefing stages, showing at each point of decision the available options and the consequences of particular options selected.

During feasibility studies of the proposed system there were indications that these objectives cannot be met entirely. The system can identify the type of accommodation but further work is necessary to decide the best way to quantify the amount.

7.2.2 Initial Format of ADD

To test the feasibility of applying the ADD concept to planning all sections of a hospital, the author decided to prepare outline drafts for several sample departments. These included, Out Patients, In Patients Accommodation, Childrens Accommodation, Accident and Emergency, Operating and Elderly Patients Accommodation.

Outpatients Department

The Outpatients department was selected as the first draft and a worked example given of its hypothetical use by a project team. The document was structured in two parts - 1. ADD decisions and, - 2. Schedule of Activity Spaces.

Part 1 contained the decisions to be made and recorded by the project team when planning the service and was presented as a set of preferred options which may be chosen. It was suggested that other options could be added by the user if required.

The sequence of decisions were set out under four broad headings:

General Philosophy of the complete service.

Scope and Workload of the complete service, being a statement of the functional content and need which has been previously determined.

Organisational Principles and General Facilities upon which the complete services accommodation will be based.

Accommodation Facilities for each element of the service giving basic principles and workload for the element together with a statement of the facilities required (in terms of exclusive and shared activity spaces).

Part 2 was intended as a schedule of Activity Spaces giving a list of the accommodation for the service. It permitted the totals of activity spaces to be accumulated arising from the decisions recorded in part 1. The document attempted to group generic activity spaces and arranged these so that it

would be possible for the number of rooms or a proportion of room usage required to be recorded against their respective service element. It was intended that after accumulating totals from part one, the document could also be used for the re-examination of the accommodation which could be shared and finalising totals for each activity space.

The first ADD draft adopted a question/answer approach by which the user was led through the document, recording the answer to each question by ticking the option(s) required. The technique adopted referred the user forward where appropriate to another subsequent page for further questions resulting from the choice of a particular option. (Fig 39)

It was intended that when completing the section giving accommodation facilities for the individual elements of the service (which in OPD are the specialties, paramedical services and other facilities), the user would refer where necessary,

> '.... to information "below the line". (See Fig 40) This states any relevant principles and workload for the element which in some cases is a necessary preliminary to choosing the detailed facilities for the element which appear 'above the line'.

In the first part of the ADD, in addition to ticking the facilities required it was intended that the user would,

SHB DRAFT	ACTIVITY DATA BASE ACCOMMODATION DESIGN DATA DECISIONS	PAGE 50

OPD

PARAMEDICAL SERVICES

Which paramedical staff will provide paramedical services as required?

OPTIONS	REF.	✓	GO TO PAGE
Appliance fitter (recorded under orthopaedics P.34)			-
Audiometrists (recorded under ENT P.26)			-
Chiropodist (recorded under Dermatology P.25)			-
Dental technicians (recorded under Dentistry P.24)			-
Dietitian			51
ECG, EEG technicians			52
Haematology technicians			53
Health visitors (in attendance only, no OPD accommodation implications)			-
Hearing aid technicians (recorded under ENT P.26)			-
Medical photographer/illustration			54
Medical Social Workers			55
Occupational therapists (in attendance only, no OPD accommodation implications)			-
Opticians (recorded under ophthalmology P.33)			-
Orthoptists (recorded under ophthalmology P.33)			-
Physiotherapists (in attendance only, no OPD accommodation implications)			-
Psychiatric social workers (recorded under psychiatry P.37)			-
Psychologists (recorded under psychiatry P.37)			-
Respiratory function technicians (recorded under clinical measurement P.52)			-
Speech therapist (recorded under ENT P.26)			-
at end move to page 60			

FIG 39
Activity Data Base: Options page illustrating the 'GO TO PAGE' column, Accommodation Design Data

(*Note: SHB - Systems Health Building')

SHB DRAFT	ACTIVITY DATA BASE ACCOMMODATION DESIGN DATA DECISIONS	PAGE 26

OPD

Which out-patient facilities will be provided for ENT?

OPTIONS	NO.	REF.	✓	PART 2 PAGE
Consulting/examination combined				C1
Consulting with separate examination				C3
Treatment cubicles				V1
Audiometry (pure tone)				C4
Audiometry (free field including play audiometry)				C4
Labrynth test				C5
Hearing aid assessment				V3
Wax impression				V3
Hearing aid workshop				J2
Speech therapist				C5
Clean utility				W1
Dirty utility				W1
WC's specimen collection - male				Z1
WC's specimen collection - female				Z1
WC's specimen collection - female with bidet				Z1
Sub-waiting/receptionist				Y1
Accommodation for day surgery/investigation (will be recorded under day care facility)				
Theatre facilities for day surgery - OPD minor theatre, main theatre				
at end return to page 19				
What are the number of doctor sessions required for ENT?				
What are the number of speech therapist sessions?				
What are the number of audiometry sessions?				

FIG 40
Activity Data Base: Options page illustrating the 'GO TO PAGE' column, (the numbers e.g. C1,W1,direct the user to a 2nd part of the document for the selection of activity spaces), Accommodation Design Data

where appropriate, quantify them by recording the number of rooms or proportion (expressed as a fraction or percentage) of room usage alongside the facility required. (Fig 41, page 203).

Guidance data for estimating the number of rooms or preparation of room usage was to be made available in a separate document. Examples of this given in the introduction to the OPD ADD document were the ratio of consulting examination rooms to the number of doctor sessions and, the ratio of utilities to speciality consulting/ examination rooms which is just the beginning of the planning process. The 'below the line' information required on the OPD ADD page 26 illustrated in Figure 40, were questions related to the estimated number of doctor, speech therapy and audiometry sessions in the ENT clinical accommodation being planned.

Alongside each detailed accommodation facility the appropriate page reference of the part 2 document was given where totals for the appropriate activity spaces were to be accumulated.

Each question and option was intended to be uniqely identified within a service by a reference number. It was suggested that this offered an alternative method of

recording decisions by noting the reference number of each chosen option, together with the proportion of room usage, if applicable, on a separate sheet of paper.

Part 2 of the ADD document was to consist mainly of matrices. (Fig 41), in which the user entered numbers of rooms and the proportion of room usage in the column under the appropriate activity space name (subsequently to have a code number also) and against the appropriate service element (eg consulting/ examination - combined standard, surgery, medicine etc). In the absence of a fully developed ADB system it was though that some sheets in part 2 might eventually be presented in the form of a matrix of distinguishing characteristics for selecting the appropriate activity space 'A' sheet. (This was tried in the ADD Childrens accommodation and, the Accident and Emergency draft document which will be discussed later in this work).

The process of finalising the activity space totals was considered to be iterative and details of facilities recorded in part 1 might be amended in the process. In order to achieve this there was the need to consider such factors as clinic timetables and the utilisation of space. Finalising the totals, it was thought, would result in a final schedule of activity spaces - giving the numbers required and the references of the 'A' sheets to be retrieved from the Activity Data Base.

SHB DRAFT

ACTIVITY DATA BASE

SCHEDULE OF ACTIVITY SPACES

PAGE C 3

OPD . CONSULTING/EXAMINATION

	Consulting + 2 Exam Standard	Consulting + 2 Exam ENT	Consulting + 2 Exam Genito - uri	Consulting + 2 Exam Rectal	Consulting + 2 Exam Gynaecology/ Obstetrics
Cardiology					
Chest Diseases					
Dentistry					
Dermatology & Chiropody					
ENT					
Geriatrics					
Gynaecology					
Medicine - general					
Neurology					
Obstetrics					
Ophthalmology					
Orthopaedics & trauma					
Paediatrics Children's department					
Physical medicine					
Psychiatry					
Radiotherapy					
Rheumatology					
Staff Occupational health					
Surgery - general					
- neuro					
- plastic					
- cardiothoracic					
Urology					
Venereal Diseases					
Other					
TOTAL					
"A" SHEET REF.					

FIG 41
Activity Data Base: Matrix for activity spaces, Accommodation Design Data

It was proposed that when all accommodation design data decisions had been recorded by the project team, the design policy narrative could be prepared directly from the completed pages.

The draft OPD document was used in the DHSS as a pilot to prepare a brief based on the existing Harness Outpatient Department planning policy. For trial purposes all the options contained in the ADD document, and the options selected for a complete outpatient department were underlined. Extracts from this first attempt at producing a narrative brief from ADD are shown in Fig 42.

The approach seemed promising and application of the same format to a first draft of accommodation for children seemed to be acceptable.

In patients

The author made an attempt to extend the ADD method to Inpatient accommodation and this resulted in a further stage of development. One of the original objectives behind developing the method was to minimise the need for project team members to refer to a multitude of different guidance documents. The concept of self contained supporting guidance data was pursued and a draft illustrating the principles which would be helpful for use with ADD was prepared. At this stage the idea was maintained that this supporting

FIG 42
Example of Outpatient Brief prepared from the draft Accommodation Design Data document

3. ORGANISATION

3.1 The day to day control of out patient services will be the responsibility of the Hospital secretary, Patient services manager/officer, Patient services manager/officer for clerical staff only, Nursing Officer no. 2 and Nursing officer no. 2 for nursing staff only.

3.2 The system of patient documentation will be pre-registration at first attendance, manual process - some mechanisation ie labelling machines, with full data processing equipment.

New patients will register centrally at the medical services department and locally at a reception in OPD. Re-attendances will report directly to the OPD local reception point.

The type of appointment system in operation will be block, individual.

The categories of patients documented will be: first attendance for pre-registered outpatients, ambulant patients with doctor's letter and non-ambulant patients with doctor's letter; return attendance of ambulant booked patient and non-ambulant booked patient.

3.3 The control of sub-waiting areas will be the responsibility of the Clinic receptionist and the Clinic nurse. The procedure if a patient is taken ill in the waiting areas will be procedure i*.

3.4 The patient will be called from the main waiting are by the Clinic receptionist, the Clinic nurse, the Clinic auxillary.

3.5 Research will be undertaken involving: interviewing patients and/or their relatives; collection of pathological specimens and the observation and monitoring of patients over a limited period (ie screening).

3.6 Teaching will be carried out for:-

- Medical undergradutes
- Medical post-graduates
- Student nurses
- Pupil nurses
- Pupil midwives
- Post registration nurses
- Dietitians
- Medical Social Workers
- Physiotherapists
- Orthoptists
- Radiographers
- Medical Photographer trainees
- Speech therapists
- Technicians, trainees - ECG
  EEG
  Respiratory function
  Plaster
- Health visitors
- Patients and/or their relatives

3.7 Patient weighing and measuring facilities will be centrally at reception/registration, adjacent to selected sub- waiting, adjacent to each sub-waiting.

3.8 The system of supply for disposables will be topping up, for sterile items topping up, for stationery - requisition, for cleaning materials topping up and for instruments and equipment will be topping up.

3.9 Staff changing facilities will be required for central staff changing, local staff changing and local limited changing eg handbag lockers.

N.B.
(* appropriate narrative of procedure would be inserted here.)

4. SPECIALIST FACILITIES

(For this and the following sections x denote usually a number of rooms appearing in this position and * denote that either a number of rooms or a proportion - expressed as a fraction or percentage of room usage - would normally appear in this position).

4.1 CHEST DISEASES

The number of doctors sessions required for this speciality are x

The facilities to be provided for chest diseases are:-

Consulting/examination combined	*
Consulting with separate examination	*
Treatment - large trolley	*
Treatment - small trolley	*
Clean utility	*
Dirty utility	*
WC's specimen collection - male	*
WC's specimen collection - female	*
WC's specimen collection - female with bidet	*
Sub-waiting/receptionist	*
Respiratory function test (recorded under para medical-clinical measurement)	
Accommodation for day investigations (recorded under day care facility).	

4.2 CARDIOLOGY

The number of doctors sessions required for this speciality are x

The facilities to be provided for cardiology are:-

Consulting/examination combined	*
Consulting with separate examination	*
Treatment - large trolley	*
Treatment - small trolley	*
Clean utility	*
Dirty utility	*
WC's specimen collection - male	*
WC's specimen collection - female	*
WC's specimen collection - female with bidet	*
Sub-waiting/receptionist	
Respiratory function tests (recorded under para medical-clinical measurement)	
Accommodation for day investigations (recorded under day care facility)	

4.3 DENTISTRY

Chairside assistants will be nurses, dental assistants, technicians.

The facilities to be provided for dentistry are:-
Basic accommodation:-

Dental surgery	x
Recovery	x
Consultants office	x
Dark room	x
Clean utility	*
Dirty utility	*
WC's specimen collection - male	*
WC's specimen collection - female	*
WC's specimen collection - female with bidget	*
Sub-waiting/receptionist	x

Sub-regional additional accommodation:-

Dental surgery	x
Consultants office	x

guidance material would be provided in a separate section of each ADD document. There would be easy reference between the guidance and option pages of the ADD, by adopting the same section numbers. For example page 4 of the guidance gave information regarding catering and this matched the options on page 27 onwards.

As an experiment a change in approach was made so as to structure the organisational options as statements rather than questions. It was thought originally that the selection of options by implication required an appropriate question to be asked. However, phrasing the options as statements (fig 44) was more likely to be useful when preparing the narrative brief in which the answer (or option selected) needed to be stated rather than the pre required question.

Another feature in this draft ADD was the inclusion of an 'earlier decision' column which was intended to alert the user to previous decisions which might have to be taken into account when identifying the accommodation required. For example, on page 41 (Fig 44) against reference C and D the user is alerted to the previous decisions made on pages 27 (Fig 43), 28 and 30. On page 21 (Fig 43) the earlier decision references related to Whole Hospital Policies - WH. In addition the page layout was improved by using heavy rules around the data which was to be included in the brief. The

Nursing staff will be deployed throughout a unit and sections should be so planned that staff can move freely between one section and another if need be.

3.6 STAFF FACILITIES

3.7 EDUCATION

3.8 SPECIAL PROCEDURES & FACILITIES

3.9 CATERING

Some patients will require delayed meals or light snacks. Drinks should be easily available.

Menus will be arranged and trayed meals should be distributed by Domestic Staff although the overall control remains with the charge nurse/sister. Beverages should be prepared in a pantry, shared between a sub-unit. In addition there should be a beverage point for each section to enable drinks to be prepared by nursing staff (occasionally, particularly at night) without leaving the main bed areas. Snacks may be prepared in one of the two kitchens serving the Unit and glasses and jugs may be washed up there. Consideration should be given to the washing up centrally of the glasses and jugs.

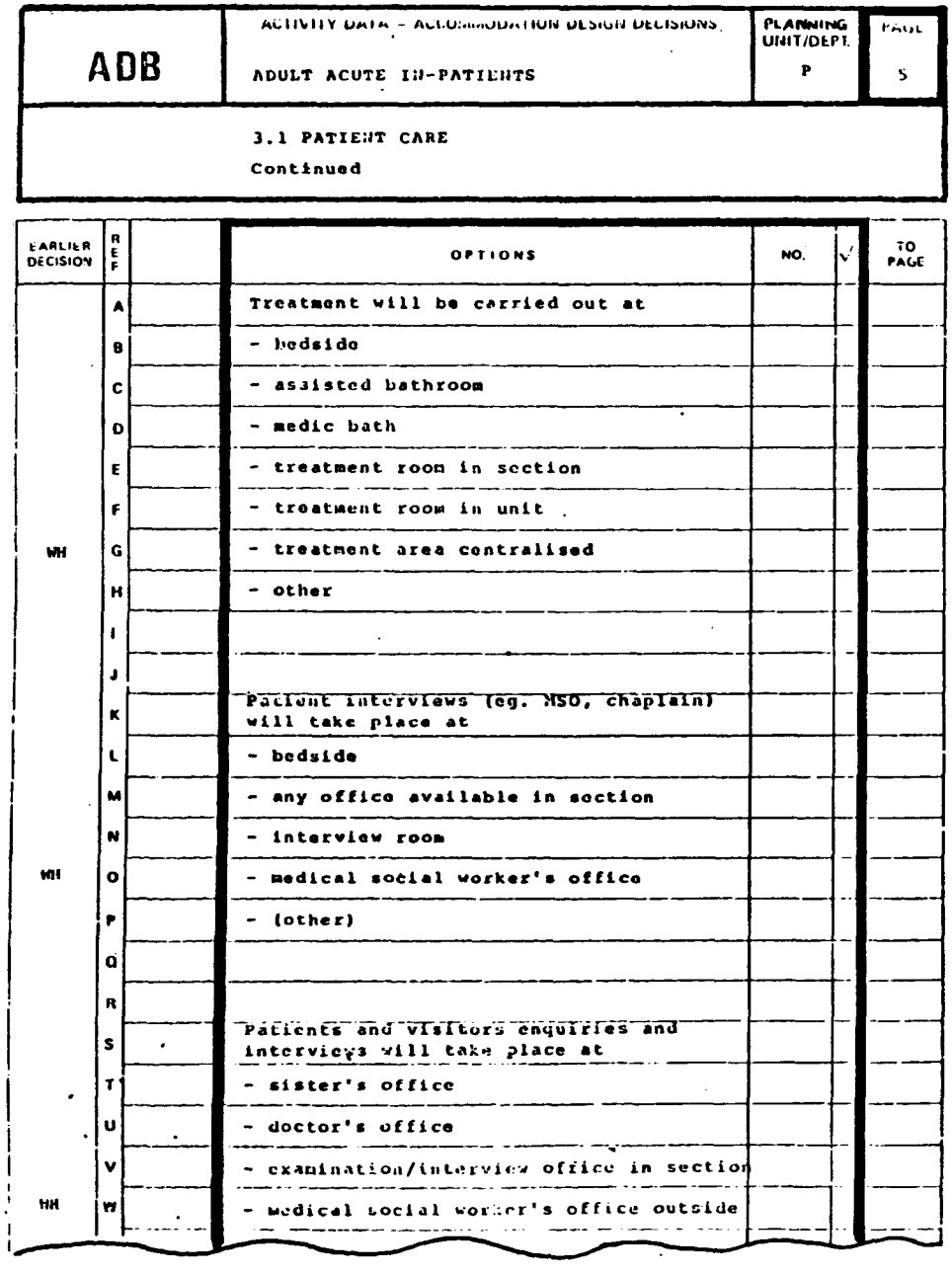
3.10 SUPPLY - Unit of 144 beds.

Goods are generally supplied to sections with the following frequency:

FIG 43
Accommodation Design Data: In Patients Accommodation, Catering Aspects (first draft); Options Page (right), Guidance Page (left)

3.9 CATERING

EARLIER DECISION	REF		OPTIONS	NO.	√	TO PAGE
WI	A		Patients' meals will be provided by			
	B		- tray service			
	C		- bulk food to section			
	D		- (others)			
	E					
	F					
WH	G		Patients will take their meals			
	H		- in bed			
	I		- seated within bed bay			
	J		- in day/dining room			
	K		- in patients' restaurant			
	L		- (other)			
	M					
	N					
WH	O		Meals will be			
	P		- heated centrally in catering departments			
	Q		- pre-prepared centrally, heated in unit			
	R		- pre-prepared centrally, heated in section			
	S					
	T					
WH	U		Light meals will be prepared at			
	V		- sub unit level pantry			
	W		- section level pantry			
	X		- section level beverage point			



ADB | ACTIVITY DATA – ACCOMMODATION DESIGN DECISIONS | PLANNING UNIT/DEPT. P | PAGE 5

ADULT ACUTE IN-PATIENTS

3.1 PATIENT CARE

Continued

EARLIER DECISION	REF		OPTIONS	NO.	√	TO PAGE
	A		Treatment will be carried out at			
	B		- bedside			
	C		- assisted bathroom			
	D		- medic bath			
	E		- treatment room in section			
	F		- treatment room in unit			
WH	G		- treatment area centralised			
	H		- other			
	I					
	J					
	K		Patient interviews (eg. MSO, chaplain) will take place at			
	L		- bedside			
	M		- any office available in section			
	N		- interview room			
WH	O		- medical social worker's office			
	P		- (other)			
	Q					
	R					
	S		Patients and visitors enquiries and interviews will take place at			
	T		- sister's office			
	U		- doctor's office			
	V		- examination/interview office in section			
HH	W		- medical social worker's office outside			

FIG 44 Accommodation Design Data: In Patients Accommodation (first draft); Options Pages - Patient care aspects (left), Facilities, illustrating 'EARLIER DECISION' column references (right)

ADB | ACTIVITY DATA – ACCOMMODATION DESIGN DECISIONS | PLANNING UNIT/DEPT P | PAGE 41

ADULT ACUTE INPATIENTS

3.5 The facilities to be provided in each 30 bed section ____BED UNIT
____high dependency ____intermediate dependency ____minimal care
____self care

EARLIER DECISION	REF		OPTIONS	NO.	√	TO PAGE
4A 7A	A		WCs patient - ambulent or sanichair			V2
	B		WCs patient - assisted or wheelchair			V2
27,28 30E	C		Beverage point			P2
	D		Ward pantry			P1
29O	E		Store - linen supply			S1
	F		Store - ward equipment			W1
	G		Cleaner			Y2
	H		Reception			J1
	I		Visitors waiting			J1
	J					
	K		The following may be shared between sections			
	L		Flowers			Y2
	M		Store - trolley/wheelchairs			W2
	N		Relatives room -overnight stay			D1
	O		WCs male visitors			V2
	P		WCs female visitors			V2
	Q		WCs male staff			V3
	R		WCs female staff			V3
22A	S		Cloakroom/WCs male staff			V3
	T		Cloakroom/WCs Female staff			V3
	Y		At end return to page 01			
	Z	NOTE	TOTAL NUMBER OF THIS SIZE SECTION			

'go forward to page reference' was at this stage retained. An assessor outside the DHSS who was asked to comment on the draft considered the approach promising (McCutcheon, 1973).

A similar document on Maternity accommodation was drafted and trial briefs prepared using Harness and Best Buy Hospital Policies (DHSS, 1972[1], 1974; Webber and Moss, 1973; MOH, 1968). The use of the earlier decision column and option statements rather than questions was considered a major improvement in the method.

Childrens Accommodation

In July 1973 a first draft of the ADD document 'Childrens Accommodation' was prepared for possible trial use in the NHS. In the event although it was widely circulated with other draft documents and received favourable comments no field trials actually took place. (Appendix 7)

As a further development of the method it had been decided to include the supporting guidance within the body of the main ADD document. Supporting guidance initially in the form of health building note extracts was printed on the page facing the appropriate options (Fig 45) and this was considered more helpful to the user than providing the guidance in separate documents. A further development was attempted by including also matrices listing the distinguishing characteristics of activity spaces and these were positioned opposite the

Parent Interview

Parents will wish to speak with members of the medical and nursing staff with regard to their child's progress, condition and sometimes for guidance in respect of continuing treatment etc., when the child goes home. Such conversations will usually take place at the bedside or in either the doctor's or sister's office.

Day Patient Workflow

The recommended workflow is as follows:-

Patients for day surgery will usually be admitted in the morning and will be accompanied by a parent; they will then be prepared for operation which will involve the use of WC facilities and sometimes will involve the use of a bath. They will be taken to the operating theatre in their cots/beds and post-operatively will remain in the recovery section of the theatre until fit for return to the day care section. Subsequently, they will remain in the unit until sent home in the charge of their parents.

Similarly, patients attending for investigation will be accompanied by a parent; where necessary the patients will be preapred in the section prior to going for investigation. The investigations will be performed in either one of the diagnostic departments or, in many cases, in the section itself. On completion of and recovery from the investigation(s), patients will be discharged home accompanied by their parents.

FIG 45 Accommodation Design Data: Childrens Accommodation (first draft);Patient care aspects,illustrating 'Harness Hospital preferred options 'H' (right),Guidance Page (left)

4.1 PATIENT CARE Contd.

EARLIER DECISION	REF		OPTIONS	NO	TO PAGE
WH	A	H	A & E Patients will be examined before admission in:		
	B		- A & E department		
	C		- in the section (e.g. admission/interview)		
	D		- in the section, in bed		
	E		- other		
	F				
	G		Patients and visitors enquiries/interviews may take place at:		
	H	H	- bedside		
	I	H	- sister's office		
	J	H	- doctor's office		
	K	H	- admission/examination		
	L		- medical social worker's office outside unit		
	M		- staff base		
	N		- reception		
	O		- other		
	P				
WH	Q		Patients admitted for day surgery may be examined in:		
	R	H	- admission/examination in associated inpatient accommodation.		
	S		- other		
	T				
WH	U	H	Visiting hours will be:		
	V		- open		
	W		- limited		

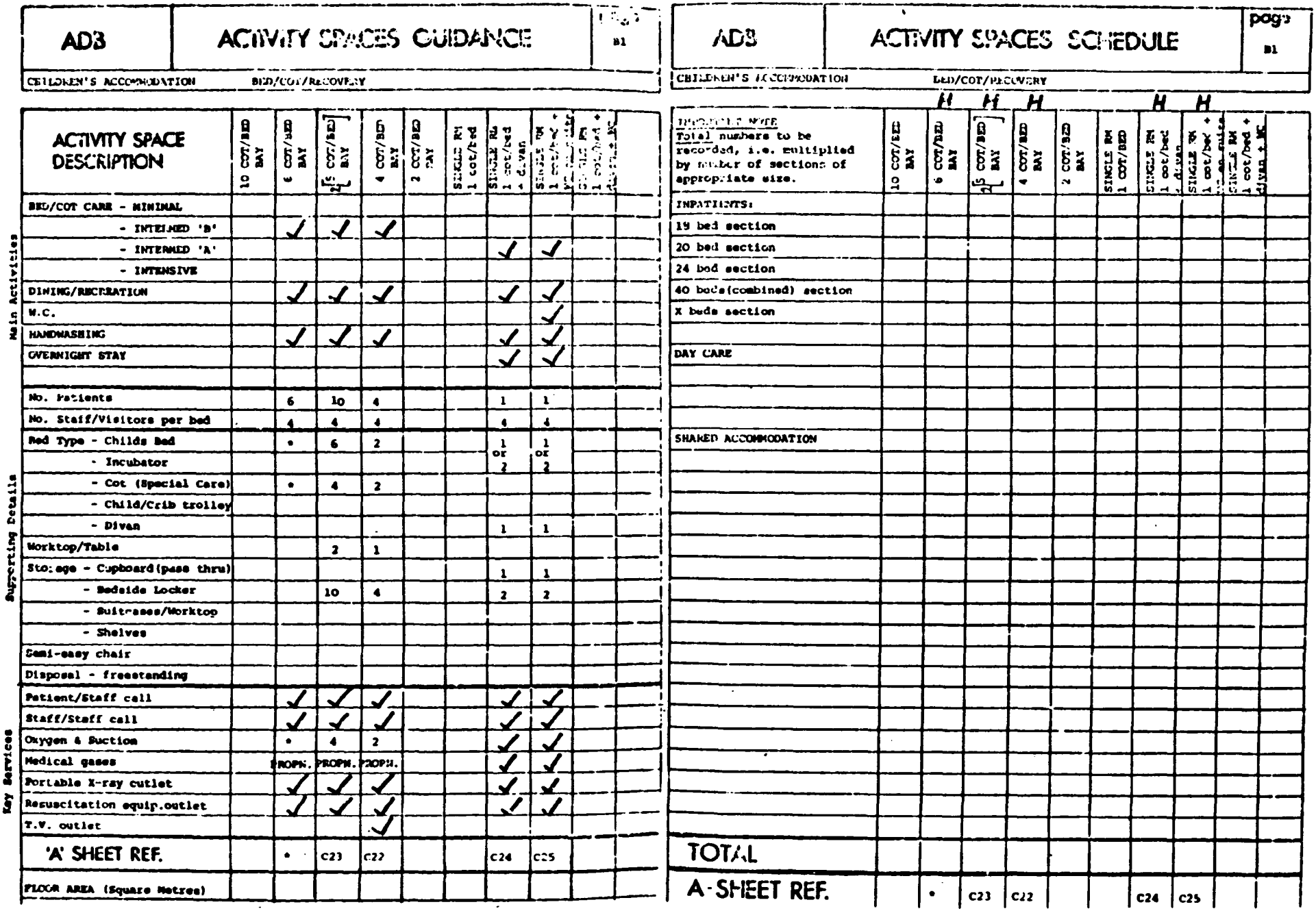
Activity Spaces Schedule (Fig 46) which recorded the total accommodation required. Subsequently this was not pursued as providing both the 'question' and 'answer' could be regarded with a degree of fascism. Figure 45 also shows how the Harness standard department decision path (H) which could be followed when selecting options was highlighted.

7.3 Initial Field Trials

7.3.1 Accident and Emergency Department (A&E)

The DHSS decided to re-design the Harness Standard A&E Department to take into account changing trends in service requirements. It was considered that a DHSS multi-disciplinary team could use ADD to prepare a new design brief on an experimental basis. Although it would have been preferable to conduct a trial of ADD on a 'live' building scheme, the DHSS undertook the design project in much the same way as an NHS project team.

The brief for the Harness A and E department is reproduced in Appendix 8. Figure 47 illustrates two sample pages from the ADD document showing the options selected (and amended where required) by the project team and the relevant extract from the brief. (Fig 48) This work was conducted on an experimental basis, the components in the experiment being,



AD3 | ACTIVITY SPACES GUIDANCE | page B1

CHILDREN'S ACCOMMODATION — BED/COT/RECOVERY

ACTIVITY SPACE DESCRIPTION	10 COT/BED BAY	6 COT/BED BAY	2½ COT/BED BAY	4 COT/BED BAY	2 COT/BED BAY	SINGLE RM 1 cot/bed	SINGLE RM 1 bed/cot + d.van	SINGLE RM 1 bed/cot + [illegible]	1 cot/bed + [illegible]	SINGLE RM 1 cot/bed + [illegible]
Main Activities										
BED/COT CARE - MINIMAL										
- INTERMED 'B'		✓	✓	✓						
- INTERMED 'A'							✓	✓		
- INTENSIVE										
DINING/RECREATION		✓	✓	✓			✓	✓		
W.C.								✓		
HANDWASHING		✓	✓	✓			✓	✓		
OVERNIGHT STAY							✓	✓		
Supporting Details										
No. Patients		6	10	4			1	1		
No. Staff/Visitors per bed		4	4	4			4	4		
Bed Type - Childs Bed		•	6	2			1 or 2	1 or 2		
- Incubator										
- Cot (Special Care)		•	4	2						
- Child/Crib trolley										
- Divan							1	1		
Worktop/Table			2	1						
Storage - Cupboard(pass thru)							1	1		
- Bedside Locker			10	4			2	2		
- Suitcases/Worktop										
- Shelves										
Semi-easy chair										
Disposal - freestanding										
Key Services										
Patient/Staff call		✓	✓	✓			✓	✓		
Staff/Staff call		✓	✓	✓			✓	✓		
Oxygen & Suction		•	4	2			✓	✓		
Medical gases		PROPN.	PROPN.	PROPN.			✓	✓		
Portable X-ray outlet		✓	✓	✓			✓	✓		
Resuscitation equip.outlet		✓	✓	✓			✓	✓		
T.V. outlet				✓						
'A' SHEET REF.		•	C23	C22			C24	C25		
FLOOR AREA (Square Metres)										

AD3 | ACTIVITY SPACES SCHEDULE | page B1

CHILDREN'S ACCOMMODATION — BED/COT/RECOVERY

DESCRIPTION NOTE: Total numbers to be recorded, i.e. multiplied by number of sections of appropriate size.	10 COT/BED BAY	H 6 COT/BED BAY	H 2½ COT/BED BAY	H 4 COT/BED BAY	2 COT/BED BAY	SINGLE RM 1 COT/BED	H SINGLE RM 1 bed/cot + d.van	H SINGLE RM 1 bed/cot + [illegible]	SINGLE RM 1 cot/bed + [illegible]	SINGLE RM 1 cot/bed + [illegible]
INPATIENTS:										
19 bed section										
20 bed section										
24 bed section										
40 beds(combined) section										
X beds section										
DAY CARE										
SHARED ACCOMMODATION										
TOTAL										
A-SHEET REF.		•	C23	C22			C24	C25		

FIG 46
Accommodation Design Data: Childrens Accommodation (first draft); Activity Space Matrix - Options Page (right), Guidance Page (left)

4.1 PATIENT CARE

Operating theatre facilities

These can be provided on one of two scales of accommodation:

1. The provision of theatres or major treatment rooms for minor surgical work only (i.e. for patients who will be able to return home after a short period or observation in the recovery area). All major casualties would be moved, after examination, to the main hospital theatres.

2. The provision of major operating theatres in the accident and emergency department. They could also be used for emergency operations during the night, thus obviating the need to staff any of the main hospital theatres at night.

The staffing arrangements of the hospital and the organisation of the accident and emergency department will influence which of these alternatives is preferred. It will generally be uneconomic to provide full staffing (especially at night) for major theatres in an accident and emergency department if the main hospital theatres are to be staffed throughout the 24 hours.

FIG 47 Accommodation Design Data: Accident and Emergency Department (first draft) - Options Page with client/user ammendments (right), Guidance Page (left)

4.1 PATIENT CARE (Contd.)

EARLIER DECISION	REF	OPTIONS	NO.	✓	TO PAGE
WH	A	Procedures such as suturing, incision of abscess, and reduction of simple fracture under general anaesthetic will be carried out in:			
	B	- a major treatment room in the department		✓	
	C	- within the main operating department			
	D	- other			
	E				
WH	F	Facilities for application of plaster of Paris will be provided:			
	G	- for the exclusive use of the department ~~for all emergency patients~~		✓	
	H	- in the fracture clinic for all emergency and fracture clinic patients			
	I	- in the fracture clinic during the day and the A&E department at night for emergency patients			
	J	- other			
	K				
WH	L	Patients who require a major operative procedure under general anaesthetic, ~~such as~~ compound fractures ~~and~~ exploration of extensive wound will be treated:			
	M				
	N	- ~~within~~ the main operating department which ~~would~~ should have preparation, recovery and short stay beds associated with it		✓	
	O	- within the main operating department			
	P	- in the major operating theatres within the A&E department			
	Q	- other			
	R				
WH	S	Patients requiring a prolonged recovery will be accommodated:			
	T	- in the beds associated with the main operating department rather than in the cubicles within the A&E department		✓	
	U	- in the short stay beds within the A&E department			
	V				
	Z				

4. ORGANISATION OF SERVICE

4.1 Patient care

The examination and treatment of ambulant A & E patients will be organised on a doctor-to-patient system for patients who need to remove clothing and a patient-to-doctor system for patients who do not need to remove clothing.

All emergency patients (except those requiring admission by prior arrangement) will be examined in the A & E department before transfer to the wards.

Treatment may be carried out in any of the following areas:-

the resuscitation area (stretcher patients only);
examination/treatment room;
examination /treatment cubicle;
plaster/major treatment room;
major treatment room.

Children will be examined and treated only in the specifically provided combined examination/treatment room.

Procedures such as suturing, incision of abscess, reduction of simple fracture under general anaesthetic, will be carried out in a major treatment room. Facilities for application of plaster of Paris for emergency patients will be provided for the exclusive use of the department. Patients who require a major operative procedure under general anaesthetic, e.g. compound fractures, exploration of extensive wound, will be treated in the main operating department which should have preparation, recovery and short stay beds associated with it. Patients requiring a prolonged recovery will also be accommodated in these beds rather than the cubicles within the A & E department. Initial segregation of patients will be achieved by the provision of separate entrances for stretcher patients and ambulant patients.

Cleansing facilities will be provided near the entrance for patients who have been exposed to radioactivity or injurous chemicals and require decontamination.

4.2 Patient facilities

Sanitary facilities will be provided in main waiting and near the treatment area. Patients' property will be kept with them (e.g. in a mobile basket) whilst they undergo examination or treatment, and they will dress or undress in examination/treatment cubicles.

The main waiting area will accommodate patients , accompanying relatives/ friends, and returning ambulance patients; there will be separate sections for both new and return patients. A separate waiting area will be provided also for children.

A sub-waiting area will be provided adjacent to the consulting rooms. This may be used for forward waiting, e.g. for patients awaiting treatment or those ambulant patients returning from X-ray.

FIG 48
Accommodation Design Data: Accident and Emergency Department (first draft) - part of narrative brief (extract relating to Fig 47 is identified within the box)

a. a multidisciplinary project team consisting of administrator, doctor, nurse, architect, engineer and quantity surveyor;

b. a design exercise with space and cost constraints;

The evaluation framework was not established at this time but an informal and anecdotal assessment by the project team found the ADD document easy to use and they were of the opinion that it saved time in reaching agreement of the brief.

7.3.2 Review of ADD content

Following the experience of the trial use of the Accident and Emergency department ADD package, the author decided in the mid 1970s to include Building Note material in ADD documents. This was a dramatic stage in the development of the method and had far reaching effects on future drafts. It was considered that this would help to achieve the following objectives:

a. provide a single source of planning material for the client or user;

b. enable total client/user requirements to be specified in one logically constructed set of project documents - the design brief.

These objectives if met would enable the ADD system to minimise the need for referral to other material - including Building Notes and policy documents - by client users when recording their requirements and, by designers when ascertaining total client/user requirements.

The experience with the A&E draft document supported the idea that the ADD structure should at that time remain basically unchanged but the material would be separated into 'Planning Options' and 'Guidance' as part of the four main categories of planning material in the ADD system. Those four main categories are as follows;

a. Briefing Decisions - which could be expressed in terms of the client/user's choice of planning options. These would be displayed on the right hand pages of ADD documents.

b. Briefing Guidance - which was to be used mainly to help planners (client/user) to select the planning options and record them in the ADD package. Generally this guidance would consist of extracts of Building Note information and other reference material displayed on the left hand pages of the ADD document alongside the appropriate planning option. It was considered that selected pages of the 'ADD guidance' could be extracted by the client/user for inclusion in an appendix to the design brief. This would provide background information

to the planning decisions recorded in the design brief narrative, which it was thought may be useful to designers and, writers of operational systems.

c. Activity Space Specifications - which were intended to be details of existing 'A' (activity data) and 'B' (component data) sheets. At this stage it was envisaged that these might be summarised in the ADD part 2 guidance matrix.

d. Design Guidance - which was considered to form part of the information given to the designers and therefore be included in the design brief narrative. It was thought that this material should be set out as statements on the right hand option pages of the ADD document. The client/users would tick these statements in a similar manner to the selection of options although in most instances all the statements would be applicable for inclusion in the brief. Detail already contained in the A sheets would be excluded.

The way in which the ADD system was intended to work is presented diagramatically in Figure 49. To summarise - the system thus far attempted to offer the means for the client/user to proceed step-by-step in the formulation of user requirements for a design brief. Taking into account the basic project information, ie functional requirements, the user selected appropriate planning options from right hand

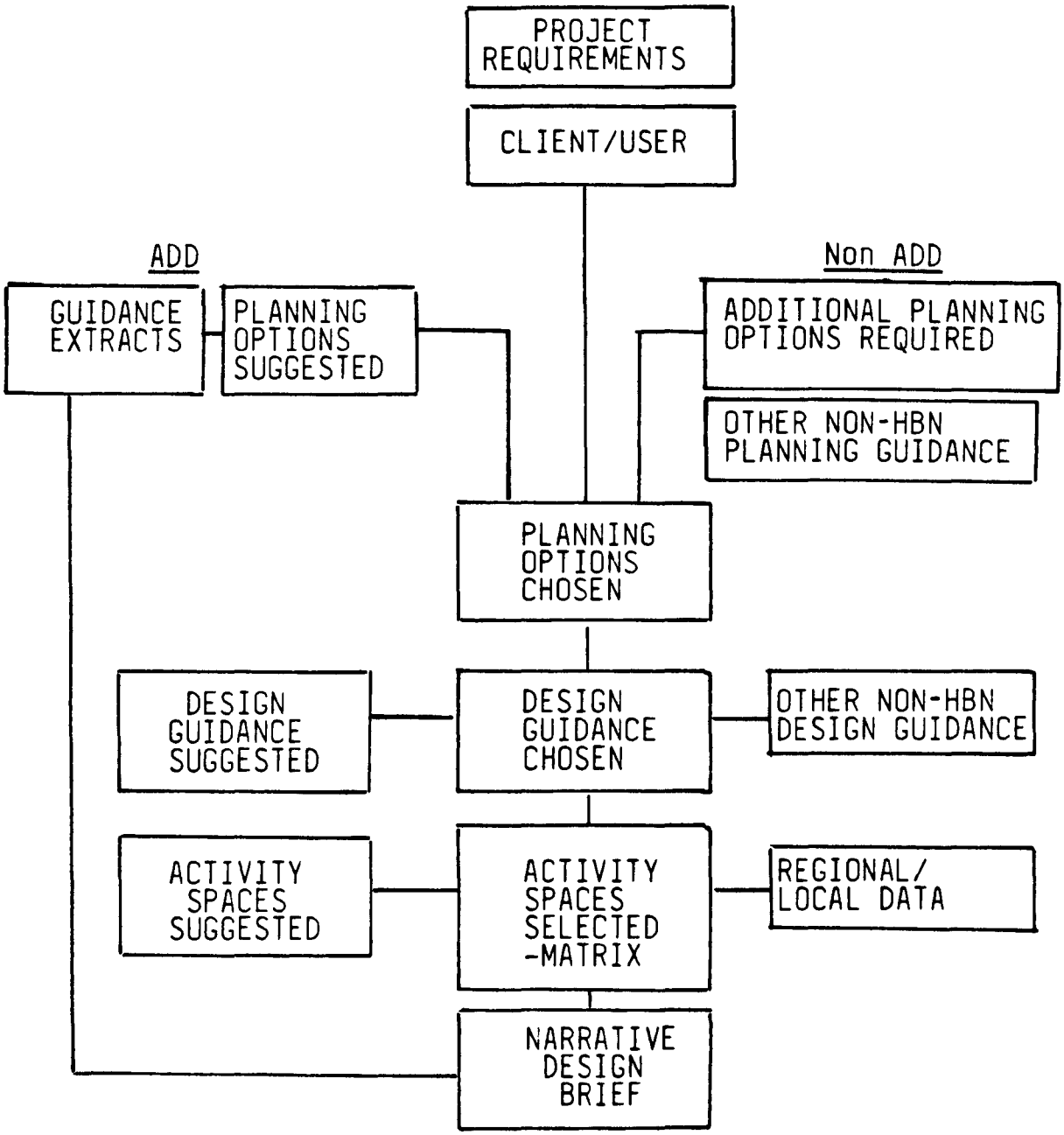


FIG 49
Accommodation Design Data: A schematic representation of the system

ADD pages ammending or adding others as required, and taking into account the relevant guidance on left hand pages. The completion of sequential pages led the user to a matrix which then helped to identify appropriate activity spaces and thereby assembled data for a narrative brief.

7.3.3 Childrens Accommodation

The changes in ADD content just described were incorporated in a new draft document for Childrens Accommodation. This draft was used by a DHSS multidisciplinary team as an aide memoire in revising the Building Note. The team found the system helpful, and by using the check list approach, it would appear to have saved time in drafting the initial stages of the revision. In the event the HBN was not published until 1983 for a variety of reasons, but the trial did show that ADD had applications other than for building projects. (Figs 45-46)

7.3.4 Operating Department/Hospital Sterilising and Disinfecting Unit HSDU)

During 1974 and early 1975 the principles tried in the Childrens Accommodation and A&D Department ADD were developed into further draft ADD document which included Operating Department, and Hospital Sterilising and Disinfecting (HSDU) Unit.

Following a presentation of the ADD method in January 1975, the South East Thames Regional Health Authority (RHA) suggested that ADD could be used as an experimental field trial to prepare a brief for a new operating department and HSDU at a hospital in South London. It would seem that the RHA project team for the development of these hospital operating theatres felt that the complexity of the development and the site were such, that a really systematic method of drawing up a brief was needed, allowing a comprehensive approach to data collection, storage and retrieval.

At the outset it was considered that the exercise was limited by a number of factors:

i. The task of producing policies and a brief which could then be developed into a sketch plan required the utmost urgency within a short timescale. Some of the Activity Data material had therefore to be prepared as the briefing continued and it could not therefore be handed over to the team for use as a complete package as the DHSS intended in the future.

ii. The ADD/ADB method was only to be used in relation to two departments of the redevelopment scheme, ie the operating department and HSDU; an outline whole hospital and other departmental briefs were to be drawn up by 'traditional' methods because experimental ADD documents

for these areas had not been developed. Moreover, the new operating department for which the ADD brief was to be drawn up was intended to include only four of the six theatres on the hospital site. The remaining two were already in existence and might be upgraded separately.

The ADD method was evaluated initially by the RHA at the point when the complete design brief was handed over to the design team. Their comments included;

'i. The ADD system offers considerable advantage in that the questions contained in the material have been evolved by a group who have examined other systems and schemes. This should ensure that all or most of the critical questions are at least asked at the very start of the planning process and as many as possible of the alternative answers are set before the team ...

ii. The decision of the team can clearly be recorded although in some cases there were still differences of opinion as what had been decided. It is however comparatively easy to compare the original documentation and subsequent narrative drafts and to refer back to earlier decision when necessary. (It was interesting to note the ADD apparently seemed to help the project team to 'know what it didn't know').

iii. The process of selecting A & B sheets initially places a heavy time consuming load on one or two members of the team. However, the need for lengthy meetings or room data sheets should be eliminated and the design pack should be more comprehensive than the conventional room data sheets.

iv. The ADD method apparently offers no more help in selecting sizes of rooms then conventional methods. The same source of guidance has to be used except that,

a. The A & B sheets give some indication of spatial requirements relating to activities which would take place and the equipment required

b. The policy itself often gives a much clearer indication of what spaces are used for, than a conventional and less systematic policy might.'

In addition to evaluation of ADD by the project team some other points were raised in a letter by a Regional Nurse (SETRHA 1975[2]) who was concerned at the beginning of the project that it was very important to produce a comprehensive and agreed operational policy and schedule of accommodation. The writer stated that,

'... this sounds a simple exercise but at the stage when I became involved the operational policy had not been

written although, because of severe site restrictions, an architectural feasibility study had been produced. This study had been used by the project team as a basis on which to develop further detailed planning. It was obvious that the difficulties which the proposed design showed had not been appreciated by the district medical and nursing staff but they had accepted the feasibility study as the design solution as it appeared to be an improvement on their existing provision and conditions. Among the functions included in the feasibility study was an x-ray diagnostic room for special procedures which appeared to have minimal or negligible back-up facilities.'

The writer pointed out that approaching preparation of the new brief using ADD resulted in a far more practically thought out solution which would position the special procedures facility adjacent to an existing operating theatre suite and the X-ray department. The use of ADD had been helpful for,

'Having completed the policy and schedule of activities for the operating theatres and HSDU, I feel that the policies have been thoroughly and methodically thought through by the members of the project team and that therefore there should be far fewer problems with the design than there would have been with the more usual system of brief information.'

Design work on the proposed operating department was delayed for twelve months following completion of the brief.

The first NHS field trial of ADD had shown some promise of the benefits which had been anticipated, and users found little difficulty in applying the method to arrive at an agreed brief. It was for this reason that no major changes in the format were envisaged by the author other than a positive decision to restrict the 'go to page x' column to the section of the document which identified the number of activity spaces needed (see Fig 50) and which directed the user to the activity space matrix to facilitate selection of appropriate activity sheets. For the operating department trial the 'go to page' column in the organisation options part of the document had not been completed. In practice this tended to disrupt the train of thought of the project team by the intermittent movement back and forth through the document. It was considered better for the user to progress through the document without interruption and utilise the previous decision column to check back for compatability with decisions already made. The precoded earlier decisions references were considered still applicable to options added by users, as these were positioned like with like.

ADB	ACTIVITY DATA-ACCOMMODATION DESIGN DECISIONS OPERATING DEPARTMENT	PLANNING UNIT/DEPT. OD	PAGE 107.

8. DETAILED FACILITIES (contd.) The shared (multi use) accommodation/ administration facilities (which have not been recorded before) to be provided are:

EARLIER DECISION	REF	OPTIONS	NO.	✓	TO PAGE
8M 57-61	A	- disposal corridor			Y1
	B	- disposal corridor staff WC			V1
21	C	- laboratory			L1
38 39	D	- staff lobby - male			J1
	E	- staff lobby - female			J1
16 38 40Q	F	- staff rest room to seat 10			D1
	G	- staff rest room to seat 22			D1
38-40 62	H	- changing room/WC - male			V1
	I	- changing room/WC - female			V1
29, 42A 53L	J	- senior nursing officer's office			M1
	K	- nursing officer's office			M1
40-43	L	- seminar room to seat 10			H1
	M	- seminar room to seat 20			H1
	N	- seminar/classroom			H1
41-42	O	- pantry			P1
27	P	- shoe cleaning			Y1
21 26P	Q	- laboratory/workshop:electronics			L1
	R	- laboratory/workshop:anaesthetic			L1
22 52O	S	- X-ray dark room			R1
	T	- X-ray dark room - automatic processor			R1
29A	U	- anaesthetist's office			M1
29 32	V	- nursing secretary's office			M1
	W	- anaesthetic secretary's office			M1
	X				
	Y	At end return to page 93			

FIG 50
Accommodation Design Data: Operating Department; Options page illustrating the 'GO TO PAGE' column (the numbers e.g.Y1, H1, direct the user to the 2nd part of the document for the selection of activity spaces)

PART 3

8. A METHODICAL APPROACH TO DESIGN BRIEFING

8.1 Introduction

The first two parts of this work attempt to argue the case that current methods used to elicit and organise the user input to a design brief are not methodical and either haphazard or inefficient and therefore incomplete. Further, many of the methods attempted more recently, although based on some form of a structured approach are also incomplete or too restrictive, and do not provide the information necessary to produce a comprehensive, well considered statement which satisfies user requirements without unduly constraining the creativity of the designer.

Further, it is argued that because these methods have apparently failed it does not necessarily follow that a systems approach is wrong. The final part of this work, which attempts to satisfy the demands of an evaluation framework first mentioned on page 227 and overleaf, will propose a new method for briefing based on the ADD system described in part 2 and which is applicable broadly to the three levels of decision making, described previously and set out below in reverse order from that normally adopted for a building project:

a. Departmental

b. Whole Hospital

c. Strategic and Operational Planning

8.2 Evaluation Framework

Mention has been made already in Section 7.1.1 of the criteria which should be taken into account when creating an efficient briefing system. The sixteen questions posed on page 173 although not exhaustive, are broadly applicable to most projects. These questions tend towards the more practical aspects of project team work concentrating on those which influence the time which needs to be spent in order to arrive at a comprehensive, well considered and understandable brief. The following explores the background behind the choice of questions.

Simple to use/manage: With increased delegation of responsibility for building schemes in the reorganised NHS to District Health Authorities, there will be a lack of client/user planning expertise for some considerable time to come. Whilst many authorities have appointed 'second in line' officers exclusively to planning posts, others have combined the duties with managerial functions. This could diversify the planning input and reduce the amount of support which can be given to project teams. In many instances even where there is an exclusive planning post, the range and extent of

projects and the amount of work, will limit the planning support available. Many of the client/user representatives on project teams, whilst being experts in their own clinical specialties, initially have little or no planning experience. This means that any briefing method used must be simple and practical in approach and not hinder the articulation of user requirements for a design brief. The more complex the system, the less likely that it will be used effectively. After all, all we are trying to do is to ensure that the designers get enough help to make sensible decisions in the light of current constraints and knowledge.

Check list approach: This should enable a more systematic consideration of planning options. It does not mean a 'shopping list' whereby the client/user simply ticks his perceived requirements, irrespective of other considerations which may influence whether a particular option is needed or can be justified. It is merely an aid to ensure that relevant options are not overlooked.

Client/user requirements stated clearly and concisely: Many references were given in Part I as to the importance of a clearly understandable brief. Of particular relevance and ceetainly worth repeating is that stated by Treagus (1962) who, when referring to briefing, regarded it as the most important stage of all,

'... If mistakes are made at this stage, if information given is inadequate or inadequately stated, if interpretation of instructions is incorrect or unbalanced, then much time and money will be lost....'

An effective briefing system should ensure that the way in which the client/user intends the building to work is easily understood by the designers. It should minimise the use or jargon and present information in a clear unambiguous way.

Enables implications of decisions being considered to be highlighted: Planning options cannot be selected in isolation. There is the need to consider operational or economic factors which may have important implications for the use of space or the project as a whole. Ideally it should be possible to cost options which can then be compared in terms of effectiveness, suitability and economy. The simple expedient of highlighting those options which have specific or extraordinary cost implications can be of considerable value.

Enables compatability with previous decisions to be checked: As the preparation of a brief progresses, the selection of planning options will be influenced by decisions made previously at an earlier stage. It is possible for these previous decisions to be overlooked, particularly in a large project extending over a period of time. The effect of this

can be unfortunate especially if it results in the omission or duplication of facilities. A good briefing system should incorporate some means of referring the planning team back to these previous decisions as the project proceeds.

Enables all possible identifiable choices of planning decisions to be considered: Although the emphasis is generally on the options which are selected, it is often equally important to positively eliminate others which then become specific exclusions. By recording these decisions in this way, the project team tries to ensure that when the building is brought into use, the users will be aware of the exclusions and not misunderstand the original purpose for which it was planned. A structured briefing system should help to ensure that this is taken into account during the planning stages, by listing all the options which can be identified from current guidance material.

Minimises referral to other guidance material: Works professional members of a project team will need to be fully conversant with current building guidance and statutory regulations. For the purpose of the client/user input to the brief considerable time can be saved if references to appropriate extracts of guidance are easily available. It is of great value if these references or extracts of guidance are presented alongside the options being considered. There will always be the need to consult other more comprehensive

guidance material for points of detail, but such a facility within the briefing system avoids the need for constant referral to the full guidance documents.

Briefing information compatible with other information/ guidance systems: In relation to the NHS the briefing information needs to be compatible with documents such as Health Building Notes, Health Equipment Notes and Health Technical Memoranda. For the purpose of a system framework it is important to recognise that virtually all options have some form of cost implication. It is therefore destructive to include information in the briefing system which is incompatible with information/guidance systems on which cost allowances are based.

Part of a systematic data chain: Briefing cannot be looked at in isolation, it relies on policy information decided at whole hospital and strategic operational/service planning level. The architect and other works professionals use the brief in conjunction with various data processes including engineering costing procedures. There are considerable advantages in time and efficiency if the briefing system is one part of a systematic data chain leading from the Whole Hospital level to detailed planning, including locational relationships and subsequently commissioning and evaluation.

Accommodate choice of alternative options not contained in the documentation: Notwithstanding the points mentioned already regarding identifiable choices of planning options/decisions, a briefing system should facilitate a project team 'doing their own thing'. The structure of the system should provide a framework where unforseen or project specific options can be added to sections of 'like' options, and still maintain the logical progression and recording of decisions in the document. Of course this flexibility is not without penalty, for the insertion of a new alternative option carries with it the responsibility to consider cost implications and the effect of these options on the project as a whole. Nevertheless, a good briefing system should offer this flexibility in approach.

Enables the incorporation of graphics to convey a particular option: There are instances when an option is more suitably presented in graphic form rather than text, eg a table, graph, or chart. The use of these are often very appropriate in demonstrating workload, and frequency or potential occupancy of spaces and rooms. The presentation of this information should form a complimentary addition to the narrative brief and be part of its structure.

Enables whole hospital/whole building policy considerations to be taken into account: Many of the organisational options in a project dealing with specific parts of a building are

very dependent on the total hospital/building policies. For example the amount and size of spaces will need to conform to the overall organisation and delivery of supplies, the collection of items for disposal, catering facilities, and portering services. A briefing system should enable these factors to be taken into account, particularly if the special nature of the department being planned requires specific variations from the general whole building overall policies.

Does not inhibit innovation design/is not prescriptive: The primary aim of a briefing system is to enable the client/user to express his requirements in terms of how the building is intended to work, ie the operational policies. The brief should not prescribe; it is for the designer to interpret the client/user requirements into a design solution. A briefing system should not result in the generation of a brief which inhibits innovative design. The system is doomed to failure and results in frustration if the designer feels that it holds them in a 'straight jacket'. He may well adopt a standard solution which does not respond to changes in demand over time.

Does not assume a standard design solution: It could be argued that even if a standard design solution is the ultimate goal, then there are still merits in proceeding through the briefing process. This enables the client/user to understand the operational policies behind the standard

design. It also enables the incorporation of minor operational or design modifications during the planning stages. However, there is limited value in a briefing system which is structured to routinely produce a standard solution. The system should be able to facilitate both 'one off' and standard approaches.

Reduces the amount of paper work in briefing: Most building projects seem to operate under the influence of Parkinsons Law where every piece of paper seems to propagate a further ten or more companions. In a large project the amount of paper generated is frightening, even with efficient filing and referencing methods it is difficult to ensure that information is readily available when required. More paper often means more errors and less efficiency. An efficient briefing system should not create unnecessary paperwork, indeed by a systematic approach the need for paper work should be reduced. It should be possible for each member of the project team to retain information on decisions made in relatively compact documentation, without the need to refer to other sources.

Reduces the amount of conventional minutes of projet teams: Although accurate and informative minutes of project team meeting are an essential element in the management of a project, conventional minutes are often overweighted in detail. The record of decisions taken (and often revised) at

various times may be embedded a series of minutes (which may in turn be inaccurate) and difficult to find when required for reference at later stages. Ideally a briefing system should enable project members to keep a record of decisions as they are taken. The minutes need then concentrate only on the background leading up to decisions made with cross references to the brief as appropriate. This not only reduces the amount of paper generated, but facilitates referral to previous project team meetings.

Flexible in use: It is a natural response to be antagonistic towards any method or system which appears to impose a rigid or prescriptive approach. Project teams tend to operate in an individualistic manner which depends on the composition of members and their particular role as they perceive it. The chairman may organise project team meetings in a particular way, either because this follows a well established practice or a method of working is chosen because that seems most appropriate. This final question in the evaluation framework is perhaps the most important criteria for it should be possible to use a briefing system flexibly, taking into account the particular needs of a project team rather that imposing a stereotyped method of working. Flexible use must mean also the maintenance of a logical systematic approach to the preparation of a brief irrespective of the way in which the project team chooses to operate.

8.3 'State of the Art'

The seven briefing systems discussed in Part 2 of this work only partially satisfy the criteria on which the evaluation framework is based (page [71]). Some of the systems presented too many facts and too much detail; others were not sufficiently comprehensive. In some instances there was a tendency to be prescriptive and in others to assume a standard design solution approach.

It could be argued that standard design solutions may in certain circumstances be appropriate; the problem is that users are not 'standard'. Nor does time or the body of knowledge stand still. However, to be effective and briefing system must accommodate a flexible approach to meet all planning situations. None of the systems described entirely achieved this aim.

Because of these variations in structure of the briefing systems discussed, comparison of effectiveness is not entirely straightforward. Although the criteria set out in the evaluation framework broadly covers the attributes which would be expected of briefing systems, it was not appropriate simply to record whether a particular system did or did not conform. In some instances the criteria were partially met and this is acknowledged in the matrix illustrated in Figure 51.

Certainly none of the systems available at that time could be regarded as entirely satisfactory. Briefs in general remained incomplete and of variable standard. Project teams who endeavoured to adopt a detailed and analytical approach often became submerged in piles of paperwork resulting from their efforts. In many instances briefs left designers with much still to 'guess' about user requirements and considerable time must have been spent in alternative design work.

8.4 Change of direction

Mention has been made of seven experimental briefing systems, six of which in many respects failed to satisfy an evaluation framework (Fig 51). The seventh system, Accommodation Design Data (ADD) being explored by the author, although a promising aproach, had a number of deficiencies; it appeared to satisfy eleven out of eighteen evaluation criteria, but only partially satisfied the remaining seven. Some designers were extremely critical of its apparent prescriptive/ inhibitory characteristics. There was still the need for the user to constantly refer to other guidance material, it was still not part of a systematic data chain, the incorporation of graphics to convey a particular option had not been achieved and, Whole Hospital policy decisions were only partially taken into account.

FIG 51
Comparative evaluation of Briefing Systems

Criteria	Greenwich Project	MOPBW Activity Data Method	Harness Project	DHSS Activity DataBase	Australian Action Sequence for Health Facility Planning	S.African Briefing & Design Guides	Accommodation Design Data
Simple to use/manage	O	O	O	O	O		✓
Checklist approach		✓				✓	✓
Client/user requirements stated clearly and concisely	✓	✓	✓	✓	O	O	✓
Enables implications of decisions being considered to be highlighted							✓
Enables compatibility with previous decisions to be checked							✓
Enables all possible identifiable choices of planning decisions to be considered	✓		✓	✓		✓	✓
Minimises referral to other guidance material		O	O				O
Briefing information compatible with other information/guidance systems	✓		✓	✓	O		✓
Part of a systematic data chain			✓	✓		O	O
Accommodate choice of alternative options not contained in documentation		✓	✓	O			✓
Enables the incorporation of graphics to convey a particular option	✓		✓				O
Enables whole Hospital policy considerations to be taken into account	✓		✓				O
Does not inhibit innovative design	✓				✓		✓
Is not prescriptive	✓						O
Does not assume a standard design solution							✓
Reduces amount of paper work in briefing				O	✓	O	✓
Reduces amount of conventional minutes of project team							O
Flexible in use	O		O	✓			O

Key: ✓ meets requirements; O partially meets requirements

In addition, Accommodation Design Data (ADD) although having some effect on the reduction of the project paperwork had not entirely achieved this aim, was not completely flexible in use, and in some instances tended to be somewhat prescriptive in the way in which planning options were presented. For example, in the Operating Department draft (Fig 50, page 224), the user was simply asked to choose an activity space probably without having given sufficient thought to whether the space was in fact needed in the first place. Furthermore, the user was then directed option by option to a later page and so had to constantly move forwards and backwards through the document as the brief was prepared.

Some change of direction seemed to be indicated and a series of seminars were held to explore whether the principles of ADD might be developed into a new method of briefing ie the Design Briefing System (DBS).

8.4.1 Seminars

These seminars were multidisciplinary and attended by client/users and works professionals including doctors, nurses, architects, engineers and quantity surveyors. During the initial seminars, in addition to the points mentioned above, a particular criticism was the inclusion of design guidance within the ADD documents. There was the view that the ADD approach could result in designers being placed in a

'straight jacket' with little room to develop individual initiative with all the unfortunate consequences that could generate. This point of view was understandable in the light of the way in which early ADD documents were drafted. The seminars served to overcome misunderstanding in the general approach to briefing, but more important provided the author with valuable information on which to base further developments.

These criticisms had a considerable effect on the development and structure of what ultimately became the new Design Briefing System (DBS). Designers were consulted in the drafting of ADD material and they soon realised that this merely provided an aide memoire to the design team and enabled the client/user to appreciate some of the factors which affected a design solution.

Taking into account the results of these initial seminars the author decided to adopt a different approach for structuring the proposed new system. One of the most important aspects was the method by which options were presented for selection by the planning team. It was decided to move away from the somewhat 'staccato' manner in which options were listed and present them more as organisational statements which not only formed the basis for operational policies but improved the narrative flow of the resultant brief.

Other important developments were the elimination of the 'go to page' column, an emphasis on the use of the 'earlier decision' column, the inclusion of a distinctive box or line against each option which has to be ticked or quantified as appropriate by the project team, and the elimination of the activity space matrices (Fig 46, page 212). The selection of 'A' sheets aggregating the total number of spaces required was presented in a separate document. The same principles of separate guidance and option pages were applied in this document called 'Part 2.'

Draft documents incorporating the new method were prepared for 16 different hospital departments. These were presented informally as an outline methodology to all Regional Health Authorities, (to nurse planners initially, sometimes followed by multidisciplinary discussions) and the response at these presentations appeared encouraging. This reaction from potential users supported the views held by senior works professionals, who at a presentation of DHSS current developments in research, (DHSS 1975) had asked that the DHSS resources should be devoted, above all to the subject of improved briefing.

Despite the good deal of interest which was being expressed by the NHS regarding the possible development of the new system the limited range of documents then available appeared to discourage consideration of field trials. Many

of the building schemes which may have been suitable included departments or facilities which were not covered by ADD even in early draft form. A trial of the new system would have meant using conventional briefing methods for some departments, and ADD for others. Understandably project administrators were reluctant to operate two different briefing methods in the same project, whatever advantages the new concept seemed to offer.

The title 'Accommodation Design Data inherited from earlier work on CUBITH (DHSS, 1970), could be regarded as rather ambiguous for it does not indicate what the system is really all about. For this reason, as the primary objective of the new system was clearly to facilitate the preparation of a design brief, a decision was made to attempt to formulate a title which would be more self evident- 'Design Briefing System' or DBS for short seemed appropriate.

During the initial development of the new system potential users had become familiar with the term Accommodation Design Data (ADD), and for this reason the change in title was delayed until later in field trials. However, to avoid confusion henceforth in this work, the title 'Design Briefing System' (DBS) will be adopted as meaning the new briefing system irrespective of whether the illustrative examples depict ADD or DBS, which at this stage are synonimous.

8.4.2 Health Centre draft

In the mid 1970s the author considered that the most promising possibility for the new method appeared to lie in producing a completely self contained document which would take into account the comparative size and complexity of the building which was to emerge. The opportunity for this arose when it was decided to revise the building guidance for health centres as the first of a new generation and style of Health Building Notes. Another advantage was the then government's policy which encouraged the building of health centres and introduced a proposed minimum spend on new health centres by health authorities, hence demand was established. (DHSS 1980[2], 1979, 1977) At that time there were several hundred health centres at early stages of planning, some of these intended to provide facilities for 10 or more Medical General Practitioners (GPs) and it was hoped that reasonably widespread field trials could quite easily be arranged.

Work was commenced on the Health Centres DBS which in some respects was thought to be a combination of what was equivalent to departmental and whole hospital briefing documents. The format was based on that which had been adopted in the revised ADD documents for A&E and Childrens Accommodation, but incorporating the major changes already mentioned (Figs 52 and 53). Whilst it was envisaged that a

MAIN ENTRANCE AND PRAM SHELTERS

A single main entrance should be provided for all patients using the Health Centre in order to facilitate control from the reception counter. If a further entrance is found to be essential or desirable, the problems of supervision and security should be borne in mind. A draught lobby will also be required which should be large enough to allow people in wheelchairs to pass freely.

Experience in centres already built has shown the need for a pram shelter within the building. It should be provided as part of or adjacent to the main entrance and draught lobby where it can be overseen from the waiting area or by the office and reception staff.

RECEPTION/RECORDS AND CLERICAL AREAS

The integration of these areas is advocated in the Building Note. In centres accommodating upwards of 10 to 12 general medical practitioners, it may be necessary to provide more than one reception/records area.

The reception of all patients, except dental patients, should take place immediately within the entrance at a counter in an entrance hall large enough to accommodate people entering and leaving the centre at peak periods. It is worth noting that 40% of callers at any one session do so only to make an appointment or collect a prescription and penetrate no further.

The reception area primarily accommodates the general medical practitioners' receptionist. Each practice or doctor's name should be clear above each reception point. A sense of privacy should be provided at each reception point but where a patient wishes to discuss confidential matters this should take place in an adjoining small interview cubicle (not to be confused with an interview room).

In making decisions concerning reception areas it should be borne in mind that there are staff and financial implications, particularly regarding service charges for family doctors.

C THE FRAGMENTATION OF RECEPTION AND WAITING AREAS HAS CONSIDERABLE SPACE, STAFF AND COST IMPLICATIONS (BOTH CAPITAL AND REVENUE) WHICH WILL AFFECT THE SERVICE CHARGES TO GENERAL PRACTITIONERS AND SHOULD NOT BE CONTEMPLATED WITHOUT THOROUGH CONSULTATION AND DISCUSSION.

A reception/enquiry point for all other services may be needed in larger centres and should be adjacent to the main reception counter allowing for economic coverage by the reception staff at certain times of the day. A stock of empty specimen containers for issue may be held here, used containers awaiting collection should not be stored here.

FIG 52 Accommodation Design Data: Health Centre; Organisation of Service, Shared facilities, Entrance/Reception/Waiting - Options Page (right), Guidance Page (left)

EARLIER DECISION	DO	3. ORGANISATION OF SERVICE 3.7 SHARED FACILITIES-ENTRANCE, RECEPTION & WAITING
		ENTRANCE
	A	Entrance to and exit from the centre will be required for:
		(a) general medical practitioners patients ☐
		(b) community services patients ☐
		(c) dental patients ☐
32A		(d) pharmacy customers ☐
		(e) patients attending hospital consultant sessions ☐
		(f) staff and goods ☐
		(g)
	B	Separate entrance and exit are preferable for:
32B		(a) staff and goods ☐
		(b)
	C	Facilities adjacent to the main entrance are required for:
		(a) a draught lobby ☐
		(b) a pram shelter ☐
		(c) an entrance hall ☐
		(d) an enquiry point ☐
		(e) a reception area ☐
		(f) a waiting area ☐
		(g)
		RECEPTION
	D	The reception area should include counter facilities for patients attending:
20		(a) general medical practitioner suites ☐
24		(b) community services ☐
27		(c) dental services ☐
31C		(d) hospital consultant sessions ☐
		(e)
	E	The reception counter should be:
		(a) undivided ☐
		(b) sub-divided for:
		(c) general medical practitioner suites ☐
		(d) community services ☐
		(e) dental services ☐
		(f) hospital consultant sessions ☐
		(g)
		(h)

ADD	ACTIVITY DATA-ACCOMMODATION DESIGN DECISIONS HEALTH CENTRE	PLANNING UNIT/DEPT HC	PAGE 41

EARLIER DECISION	P E T	3.11 SHARED FACILITIES - SUPPLY AND STORAGE
	A	Goods to be supplied by the nearest district stores will be:
		(a) linen ☐
21D		(b) sterile supplies - dressings ☐
29G		(c) sterile supplies - instruments and utensils ☐
		(d) medical and surgical sundries ☐
15A		(e) pharmacy supplies for the Area Health Authority services ☐
		(f) stationery ☐
		(g) hardware and crockery ☐
		(h) cleaning materials ☐
		(i) catering provisions ☐
		(j)
	B	Goods to be supplied from a C.S.S.D. will include:
23D		(a) sterile supplies - dressings ☐
		(b) sterile supplies - instruments and utensils ☐
		(c)
	C	Goods to be supplied direct from commercial sources will include:
		(a) medical and surgical sundries ☐
		(b) stationery ☐
		(c) hardware and crockery ☐
		(d) cleaning materials ☐
		(e) catering provisions - milk ☐
		(f) catering provisions - other ☐
26I		(g) welfare foods ☐
		(h)
	D	The number of days supply held will be (SPECIFY NUMBER OF DAYS):
		(a) linen ☐
		(b) sterile supplies ☐
		(c) medical and surgical sundries ☐
		(d) pharmacy supplies for Area Health Authority services ☐
		(e) stationery ☐
		(f) hardware and crockery ☐
		(g) cleaning materials ☐
		(h) catering provisions - milk ☐
		(i) catering provisions - other ☐
26I		(j) welfare foods ☐
		(k)

FIG 53
Accommodation Design Data: Health Centre; Organisation of service, Shared facilities, Supply and Storage - Options Page (right), Guidance Page (left)

health centre project team would use the new DBS document in a similar manner to that adopted for hospital departments, there were special considerations which applied to the preparation of a health centre brief. The establishment of a sizable health centre required an amalgam of multi interests, assuming that comprehensive facilities may be provided for general practitioners (GPs), community services and, other primary care services such as chiropody, speech therapy, social work and dental services. In the existing situations each of these users would have well established time tables for surgery or examination/treatment sessions, and it was likely also that the GPs considering occupation of such a health centre would be from several GP Group practices.

Even before a brief could be prepared it seemed important therefore, that the users should 'take stock' of their existing situation in respect to sessions already established plus the number of patients and escorts attending and, attempt to extrapolate this information to the proposed new facilities. Rather than the imposition of planning constraints in terms of limited provision entirely by costs, this process should then encourage the users to rationalise their individual requirements and prepare tentative programmes of sessions which would enable economical planning in terms of accommodation.

It was thought that this could be achieved by including charts in the DBS document which would help users to collect information on their current workload before options for the project were considered. Figure 54 illustrates charts suitable to record information relevant to GP sessions. Figure 55 illustrates charts recording patient attendances. These Figures were taken from one of the health centre trials and show both an anticipated increase in GP sessions and patient attendances. During this trial, using the information collected on the charts, the proposed sessions were reviewed and a main waiting area with space for 36 GP patients and 24 community services patients was agreed.

8.4.3 Health Centres Seminar

The interim edition of the new Health Care Building Note No 36 was issued to the NHS in 1979 as a working document. This was the first of a new style format for Health Building Notes which provided comprehensive planning guidance linked to the DHSS Activity Data Bank. To follow up the issue of the new style guidance, a one day multidisciplinary seminar was held to demonstrate the use of the building note and associated activity data to those who expected to be involved with health centre design from Regions, Areas and Family Practitioner Committees. This seminar also gave the opportunity to present the Health Centres DBS draft, and obtain valuable comments on its proposed general introduction

FIG 54
Accommodation Design Data: Health Centre (third draft);
Information collection chart- existing General Practitioner
Surgery sessions (left), Predicted sessions in the new Health
Centre (right)

ADD	HEALTH CENTRE	GUIDANCE	PAGE 17
3.1 GENERAL MEDICAL PRACTITIONER SERVICES			

TABLE 1

Table 1 below may be used to enter the sessions at present held by the doctors electing to practice from the health centre. Lines may be drawn to indicate the group practices, when completed the form may show that rationalisation of sessions and sharing of some consulting/examination facilities is possible.

Careful programming of sessions will also avoid unnecessary overloading of waiting space and reception facilities. Any changes in patterns of sessions should be recorded in Table 2, opposite.

TABLE 1 - EXISTING GENERAL MEDICAL PRACTITIONER SESSIONS

REF		MON			TUE			WED			THUR			FRI			SAT			NOTES
		EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	
	FULL-TIME PRACTITIONERS:																			
	Dr. M Y KHAN	/		/	/	/		/	/		/	/		/		/	/			
	Dr.																			
	Dr.																			
	Dr.																			
	Dr.																			
	BRANCH SURGERY PRACTITIONERS																			
	Dr SEED, BARKER & PURVES	/			/	/		/	/		/			/	/		/			
	Dr D'SILVA		/	/		/	/		/	/		/			/					
	Dr WASIM	/	/		/	/		/	/		/	/		/	/		/			
	Dr MIRZA				/	/		/	/		/	/		/	/		/			
	Dr ALI KHAN	/						/	/					/	/		/			
	TOTAL:	3	2	1	2	3	1	3	3	1	2	2	1	3	3	1	3	1	1	

ADD	ACTIVITY DATA ACCOMMODATION DESIGN DECISIONS HEALTH CENTRE	PLANNING UNIT/DEPT HC	PAGE 17
EARLIER DECISIONS	3.1 GENERAL MEDICAL PRACTITIONER SERVICES		

TABLE 2 Below SHOULD BE USED TO RECORD THE PREDICTED SESSIONS TO BE HELD IN THE HEALTH CENTRE

TABLE 2 - ANTICIPATED GENERAL MEDICAL PRACTITIONER SESSIONS IN THE HEALTH CENTRE

REF		MON			TUE			WED			THUR			FRI			SAT			NOTES
		EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	EARLY A.M.	LATE A.M.	AFTERNOON	
	FULL-TIME PRACTITIONERS:																			
	Dr. M Y KHAN	/	/		/	/		/	/		/	/		/		/	/			
	Dr.																			
	Dr.																			
	Dr.																			
	Dr.																			
	BRANCH SURGERY PRACTITIONERS																			
	Dr SEED, BARKER & PURVES	/		/	/			/			/			/			/			
	Dr D'SILVA		/			/			/			/			/					
	Dr WASIM	/	/		/	/		/	/		/	/		/	/		/			
	Dr MIRZA	/	/		/	/		/	/		/	/		/	/		/			
	Dr ALI KHAN	/						/	/					/	/		/			
	TOTAL:	4	4	1	3	3	1	5	5	1	3	3	1	4	3	1	4	1	1	

3.1 GENERAL MEDICAL PRACTITIONER SERVICES

TABLES 3 and 4

The purpose of completing tables 3 and 4 is to produce figures on which the design team may base the requirements for circulation and waiting space, toilet facilities, etc.

TABLE 3 below, SHOULD BE USED TO SHOW THE EXISTING PATTERN OF PATIENT ATTENDANCES OVER A SELECTED PERIOD OF ONE WEEK

TABLE 3 - PATIENT ATTENDANCES OVER ONE WEEK DURING _____ (SPECIFY MONTH)

PRACTITIONER NUMBER	MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY				SAT.	
	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am
No. 1		38		32	30			21	32			34	33				30			28	24	
No. 2	2	5	2	9	2	2	2	7	2	2			15	3	2	6	24	14	3	1	1	8
No. 3	25			44	41			17	20				39			43	23			40	22	
No. 4	15							10		13						10		12			15	
No. 5																						
No. 6																						
TOTALS	42	43	2	85	73	2	2	56	54	15		34	87	3	2	59	77	26	3	69	62	8

3.1 GENERAL MEDICAL PRACTITIONER SERVICES

TABLE 4 below SHOULD BE USED TO RECORD THE ANTICIPATED PATIENT ATTENDANCES FOR GENERAL MEDICAL PRACTITIONERS IN THE HEALTH CENTRE (NOT INCLUDING DISTRICT NURSES). THE TABLE SHOULD BE COMPLETED WITH REGARD TO THE FIGURES IN TABLE 3 AND ANY CHANGES RECORDED IN TABLE 2.

TABLE 4 - ANTICIPATED PATIENT ATTENDANCES

PRACTITIONER NUMBER	MONDAY				TUESDAY				WEDNESDAY				THURSDAY				FRIDAY				SAT.	
	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am	Afternoon	Evening	Early am	Late am
No. 1	60			50	40			30	45			40	50				40			40	40	
No. 2	25	25	25	25	20	20	25	25	20	20			25	25	25	25	25	25	30	30	15	15
No. 3		20		10	25			20		15			20			20	22			25		15
No. 4	15							15		20						15		15		20		
No. 5																						
No. 6																						
TOTALS	100	45	25	85	85	20	25	90	45	55		40	95	25	25	60	87	40	30	95	75	30

FIG 55
Accommodation Design Data: Health Centre (third draft); Information collection chart - Patient Attendances at existing General Practitioner surgeries (left), Predicted patient attendances in the new Health Centre (right)

to the NHS. The seminar was attended by over 40 representatives from the four Thames Health Regions and included doctors, nurses, administrators, architects, engineers and quantity surveyors.

In addition to a demonstration of the guidance material, the afternoon part of the seminar was devoted to a briefing exercise using the new DBS to prepare a section of a design brief for a typical health centre. Seminar participants were divided into syndicates to consider the use requirements for the reception, waiting and medical records fascilities. In the event the general approach of DBS seemed to be along the right lines; an evaluation of questionnaires following the seminar indicated that the method should prove helpful to project teams. In response to a question of how useful they thought the new method would be to project teams in the preparation of design briefs (DHSS, 1979), over half of the respondents generally felt,

> '... that it would be useful, especially after some practice and to relatively inexperienced project teams. One respondent recognised however, that much would depend on the make up of the team and another pointed out a possible shortcoming on the lack of cost guidance.'

8.5 Field Trials

8.5.1 Health Centres

From the mid 1970s onwards there were four major trials of the Health Centre DBS and these contributed to a final draft document intended for use when the Health Centre Building Note was published. These health centres varied in size in different areas of the country:

a. Hartlepool Health Authority
b. Eastbourne Health Authority
c. Portsmouth Health Authority
d. South Bedfordshire Health Authority

a. Hartlepool Health Authority

This was to be a large health centre with a GP catchment population of 73,000 and, a 98,000 population requiring community services. Accommodation was to be provided for 20 GPs from 6 GP practices and 3 individual GPs, plus facilities for visiting consultant ophthalmologists and ENT surgeons who were expected to receive referrals for all children in the area numbering 21,000.

At the first meeting of the Project Team for this difficult and complicated project the use of the new briefing method was agreed in principle. At the second meeting three weeks later the system was explained in detail and a draft Health Centre briefing document handed to each member of the team. The document was used at all nine subsequent meetings; a DHSS Nursing Officer attending each meeting as an observer to monitor progress. The Project Team members appeared to adapt easily to the system.

A substantial amount of preparatory work was done by members between meetings; the possession of an individual document allowing members to look ahead, discuss with colleagues and bring collective views to meetings was found to be helpful. Options given provided a basis for lively discussion although certain members of the team found difficulty in stating their requirements in briefing form and wished to see design solutions. Here the briefing system proved an asset in providing a framework within which the meetings could be controlled.

A first draft of the design brief from the DBS document took 6 months to prepare and was submitted to the project team at their 8th meeting. The final draft was agreed two weeks later in mid 1976.

Upon completion of the series of meetings each member of the Project Team was asked to complete a questionnaire and an analysis of responses is given in Fig 56.

Summary of comments extracted from questionnaires

1. Three members suggested that the document be restructured to take into account groups of like functions in the health centre.

2. The Chairman stated he personally found the document very helpful though two people found it irksome because of the discipline it imposed.

3. The need for a better referencing back system and for space on left hand page for notes was mentioned.

4. In answer to question 18 (Appendix 9) six out of seven members ticked 'substantial benefit'.

5. Only one member felt planning time had been increased. This was qualified with the remark "but we were dealing with difficult personality clash".

6. Family Practitioner - "In my personal position ie with no previous experience of being involved with Health Centres, I found a good deal of information, which I would not have considered previously, to be in the document".

FIG 56
Analysis of evaluation questionnaires, Hartlepool Health Centre Project Team

	YES/VERY/ SUBSTANTIAL	PARTIALLY/ LIMITED	NO/NOT E NOT
1. Effective in helping to prepare for planning meetings (especially early ones) in advance?	1 1 1 1 1 1 1		
2. Having the document lead members to obtain relevant information before meetings?	1 1 1 1 1 1 1		
3. How valuable to known group of decisions to work on individually or in consultation with collegues before the next meeting?	1 1 1 1	1 1 1	
4. Covered all the critical planning questions which have design implications?	1 1 1	1 1 1 1	
5. Decisions in it help also in highlighting some other decisions needed to record?	1 1 1 1 1 1		1
6. Decisions or implications which would have been overlooked without the document?	1 1 1 1 1 1		1
7. Guidance included helpful in reaching planning decisions?	1 1 1 1 1 1	1	
8. Guidance and planning decisions highlight (at the right time), the decisions having important cost implications?	1	1 1 1 1	1 1 dont know
9. How effective in helping to look back and consider implications of decisions made earlier, especially those made at previous meetings?	1 1	1 1 1 1 1	
10. How effective in lending itself to revising decisions as proceed during planning?	1	1 1 1 1 1 1	
11. Document easy to use?	1 1 1	1	1 1 1
12. Document flexible enough in use?	1 1 1 1		1 1 1
13. Document achieve a clear unambiguous record of decisions made at the meetings?	1 1 1 1	1	1 1
14. How useful to have an immediate and agreed record of decisions to take away, rather than have to wait for minutes?	1 1 1 1	1 1 1	
15. How valuable after each meeting to have one continuous record of all decisions taken, noted in one document rather than relying on series of minutes?	1 1	1 1 1 1 1	
16. Satisfied with end results of using the document, especially the design brief?	1 1	1 1 1 1	1
17. Consider that design brief will meet the architects requirements?	1 1	1	1 1 dont know
18. Consider planning of the project and design brief substantially benefited from using the document (even with its shortcomings as a draft)?	1 1 1 1 1 1	1	
19. Consider future stages of the project will benefit from the planning team having used the document?	1 1 1 1 1		1 1 dont know

7. Area Administrator - "I have been involved with top level planning of major Health Centres before reorganisation. There was not the need for this document then because relationships between the old Executive Council/Health Dept./GP's were better. In the reorganised set up the booklet became more valuable as time went by". (This view was expressed by other members although it would appear to miss the point of the perceived value of DBS).

b. Eastbourne Health Authority

In November 1976 a further opportunity arose to use the second draft DBS Health Centre document, which by this time had incorporated some of the amendments resulting from the first five months of the Portsmouth trial. The health centre was to be provided for 8 GPs plus primary care services to serve a population of 17-20,000 people.

The method of approach adopted by the project team for preparing a design brief, as in the previous trials, seemed to be of value in progressing logically and systematically through the briefing process. Although much valuable information was gained from using the document during a period of five months, unfortunately one of the GP practices

withdrew their interest and the scheme had to be abandoned. However, the administrative assistant to the District Community Physician (SETRHA, 1977) commented,

> '.... For what it is worth I would like to add that I am sure that the resultant brief would have been extremely comprehensive and I would have wished to process it to completion ...'

c. Portsmouth Health Authority

The concept of DBS was explained to a multi-disciplinary group at the Wessex RHA in January 1976. Following this presentation in March 1976 the Region suggested that there may be a suitable health centre project about to start and this would give the DBS system a valuable opportunity for a trial. The Regional Health Authority mentioned to the author that the health centre was very large, (WRHA, 1976), and should therefore be ideal for 'exercising' the system for,

> '.... From our point of view the approach (ADD) which you outlined laid considerable emphasis on sharing of accommodation. Clearly economy of solution is particularly important in a centre of this size.'

The health centre being planned in Wessex was of a very similar functional content to the one in Hartlepool which has been described previously. From a trial point of view, this enabled a direct comparison between the first ADD health centre draft and the amended DBS version.

Accommodation was to be provided for 22 GPs from 5 GP practices plus 3 trainees with a catchment population of over 55,000; and full community services.

Meetings of the project team commenced in June 1976 and continued until August 1977. The design brief was produced in a total of 19 meetings, the DBS documents being completed in March 1977. The project was monitored at every meeting by the attendance of a DHSS nursing officer (occasionally accompanied by a doctor) in the role of an observer.

During the trial, the project teams appeared to have no difficulty in understanding the new briefing system. The structure of the document was amended as the project progressed in the light of the way in which options had to be considered by the team. One amendment of considerable importance (shown in Fig 52, page 244) was the inclusion in the guidance pages paragraphs in red type which highlighted cost consequences of making decisions and identified areas of possible savings.

The project team were very enthusiastic regarding the value of DBS in preparing a design brief. The designers in particular regarded the brief to be of considerable help; it was the RHAs practice to appoint outside design consultants who found that the resultant narrative brief enabled the design process to proceed more rapidly.

A DBS evaluation form was given to each member of the project team and a summary of the responses is shown in Appendix 9. The various comments from this trial were taken into consideration in a further revision of the DBS Health Centre draft document.

d. South Bedfordshire Health Authority

Because of changes in RHA's capital programmes, various delays occurred in the completion of planning for the health centres for the first two trials just described. Nevertheless design work had progressed satisfactorily on the basis of the DBS brief. Indeed, in the Portsmouth project loaded drawings were completed following an outline sketch plans but the decision to proceed with the project was not made until quite recently. Contrary to this, even with a sixteen month gap between the brief being frozen and a start made on sketch designs, detailed planning of the Bedfordshire project was completed in only five team meetings over a five month period. The trial was successful as there were only two modifications needed of any consequence to the first sketch plan based on the narrative brief and a set of activity data.

The Bedfordshire project was of particular interest because a health centre of almost identical functional content had already been built in the same town where the new health centre was to be provided. Previously it had taken about 18 months to obtain a 'frozen' brief before detailed planning could commence. The RHA considered that if the DBS were used to prepare a brief for the new health centre it would be possible to make a direct comparison in terms of possible improvements of time taken and quality of data; in the event this proved to be the case.

The health centre was to accommodate two GP practices, using it as their main surgery and, three GP practices using the centre as branch surgery accommodation. The combined list of GPs was estimated at 1000-12,000. The community health services population by the year 1984/85 was estimated to total 18,000-21,000 of which 1000/1100 would be patients over 65 years of age, 4500-5300 would be children on the school roll and 2500-2900 would be children under 5 years of age.

Meetings of the project team commenced in July 1979 and continued until February 1980. The meetings recommenced in June 1981 and were completed in November 1981.

Although much smaller than the two heath centres which were included in the first DBS trials, the health centre in Bedfordshire was considered similar in complexity for

preparing a brief. The inclusion of five GP practices plus other primary care services it was thought would require considerable consultation and compromise in terms of individual facilities required. In the event, the use of DBS simplified the whole process.

The project team chairman used the DBS documents as an agenda and to plan ahead regarding the information needed at subsequent meetings. The GPs in particular were able to consult with their medical colleagues well in advance of the meeting at which decisions needed to be taken. Consultation with the representatives of community services who needed to discuss the proposed facilities with a wide range of potential users including, nursing, midwifery and other professions was also made easier.

During the five project meetings at which a narrative brief was prepared, the design 'interests' were represented by the Area Building Officer. It was a practice of the RHA not to allocate design assistance to the scheme until the stage 1 cost estimate had been approved by the RHA. On completion of the narrative brief (Appendix 10) a small group of project team members, on the selection of activity data sheets, some of which were amended to suit local requirements (Fig 57). This activity data was ratified by the project team at a subsequent meeting when it reconvened 16 months later.

FIG 57
Design Briefing System: Bedfordshire Health Centre Trial - ammended Activity Sheet

ISSUE RELATED TO NEW HBN's MARSH FARM - REV - JAN82. 10th

ADB	ACTIVITY SPACE DATA SHEET	M0210
ORIGIN DHSS	DATE APRIL 79	
ACTIVITY SPACE NAME	OFFICE NURSING - DISTRICT NURSES/ MIDWIVES - No. 1 HEALTH CENTRE	PROJECT COD

ACTIVITY UNIT SELECTION	1	STORAGE cupboard, stationery (with doors)	B04
	1	ADMINISTRATION desk, double pedestal, with chair, and S.O.	814.
	1	WORKSURFACE with kneeholes for 4 persons(clerical work with maximum drawer space included and 2 telephones)	
	5	CHAIR stacking	C04CA
	1	HOOK hat and coat, three	C03CC
	1	DISPLAY panel	C18CC
	1	DOCUMENT STORAGE, cabinet, filing, 4 drawer	C23CB
	1	STORAGE cupboards wall mounted, over workbench	

FUNCTIONAL DESIGN REQUIREMENTS

FACILITIES needed for the following activities

i) Deskwork
ii) Recording and filing patient data and record books
iii) Discussion with and teaching of students
iv) Limited storage of books and stationery
v) Displaying staff notices
vi) Coat hanging

PERSONNEL

5 staff, 2 others, intermittent

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

1 twin socket outlet

PLANNING RELATIONSHIP

Adjacent to general medical practitioners consulting suites

TECHNICAL DESIGN DATA M0210

		SPACE REQUIREMENTS		SPACE LOCATION PERIPHERAL	SPACE LOCATION INTERNAL	NOTES
AIR CONDITIONING		Air temperature	Winter	18°C	18°C	
		Air changes	Natural or mechanical	NAT	MECH	
		Air changes	Rate of mechanical			C
	★ SPECIAL CRITERIA	Air temperature	Summer			
		Air humidity	Summer			
		Air humidity	Winter			
		Air filtration				
		Air pressure	Relative to adjoining space			
LIGHTING		Lighting intensity	General	300 lux	300 lux	at desk
		Lighting intensity	Night			
		Lighting intensity	Local			
		Lighting intensity	Emergency			
	★	Glare index				
		Colour rendering				
SAFETY		Maximum accessible hot surface temperature		82°C		
		Maximum domestic hot water supply temperature				
		Acceptable level of noise from outside				
NOISE		Total acceptable sound level within space		45dB(A)		
	★	Description of noise which cannot be tolerated within space		TONAL & IMPACT		
		% 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 DOMESTIC

INTERNAL FINISHES	WALLS	FLOOR	CEILING
GRADE	D	Carpet	D
SURFACE REFLECTIVITY			
DOORS	Person access		
IRONMONGERY			
WINDOWS	Clear solor control, curtains, semi obscure half glazed		
INTERNAL GLAZING AND METHOD OF OBSCURING	N/A		

When the project team met again in June 1981 it was confirmed that the RHA had allocated a Job Architect and a Job Engineer to the scheme. The design team produced a preliminary outline sketch plan and with the exception of the waiting area and location of the treatment room and health eduation facilities, this was regarded as satisfactory. At the following meeting five weeks later the amended outline sketch plan was agreed and, the detailed loaded room layouts were completed after three further meetings at one month intervals.

Whilst it could be argued that such a programme could be achieved using other methods of preparing a brief, it is of interest to note the following:

1. The job architect was not present at any of the meetings at which the brief was discussed or activity data selected.

2. He had joined the Regional Architect's department only a short while previously and had no experience of health building design.

Taking this into account it was encouraging that the briefing data evolving from the DBS method was of sufficient quality to enable a design solution (which was not a regional standard) to be produced after only two amendments of consequence to the original sketch plan.

The evaluation questionnaires (Fig 58) were completed by seven project team members. A few points of minor detail were noted for possible inclusion in future DBS drafts but in general those responding were enthusiastic regarding the use and value of DBS. Indeed, the overall time scale in the actual preparation of the brief had been reduced by at least 50 per cent compared with a similar previous scheme.

The special interest were the comments made by the architect on completion of the design, who was impressed by the quality of the brief resulting from the new system. The architect was unable to comment on the DBS as such as he did not have anything to do with its use on the project. But he continued,

> 'I was not involved on the project until after the narrative brief had been prepared and it was this rather than the DBS itself that I used as a design brief. The narrative brief was very useful and helped me to arrive quickly at an acceptable plan. (see Appendix 11) Detailed planning (eg room layouts) has revealed that consultation between users and architect should take place <u>before</u> activity data material is selected'.

These comments confirmed the general approach of DBS was in his opinion along the right lines and, subject to ensuring

FIG 58
Analysis of evaluation questionnaires, Bedfordshire Health Centre Project Team

How effective was/were:	Effective Very	Fairly	Neither	Fairly	Ineffective Very
1. the introductory explanation	4	3	-	-	-
2. the colour video illustrating use of ADD?	2	2	1	-	-
3. the document in advance planning of meetings?	4	1	2	-	-
4. the document in covering critical planning questions?	4	3	-	-	-
5. the guidance and decisions in highlighting cost implications?	1	4	1	-	1
6. the document in helping you check earlier decisions?	6	1	-	-	-
7. the document in lending itself to revision of decisions?	3	3	-	1	-
8. the document in feasibility of use?	3	3	1	-	-
9. the decisions in highlighting other decisions?	3	1	3	-	-
10. the document in achieving a clear unambiguous record of decisions?	3	3	1	-	-
11. the method in keeping meetings to the point?	5	2	-	-	-
12. the knowledge of decisions to be made before meetings?	5	1	-	1	-
13. the guidance extracts?	4	2	1		
14. the usefulness of the document in recording decisions (rather than minutes)?	7	-	-	-	-
15. the document as an immediate and agreed record to take away?	3	3	1	-	-
16. the usefulness of the document for commissioning and evaluation?	2	2	1	-	-
17. the method in shortening the length of project meetings?	3	-	1	-	1

18/19 Referring to question 17, was this due to ADD methodology?	Yes 4	No 1
20. Did the document lead you to obtain relevant information before meetings?	5	2
21. Did the document contain items which would have otherwise been overlooked?	5	2
22. Was the document difficult to use?	2	5

	all substantial	selective reservations	none
23. How much of guidance should be included in brief?	3	2	1
24. Are you satisfied with the end result?	5	2	-
25. Was the document of any benefit?	4	3	-

26. Comparison of total planning time Less = 6 Same = 1 More = 0

that the important interaction between project teams and designer, was maintained, that the use of DBS could result in an unambiguous briefing package.

The Bedfordshire health centre was approved to proceed at a budget cost of £670,000 with a start on site in 1982/83.

8.5.2 Accommodation for Elderly People

The results of trials of the Health Centre DBS document indicated that the general approach of the method in the preparation of design briefs had proved promising. Work continued in drafting other DBS documents for use with Health Building Notes (HBNs) which were being revised. It was considered that the DBS documents should be offered for field trials in order to test the validity of the format as applied to briefing for hospital situations. Initially these would be made available only to health authorities on request.

The first new style HBNs issued in 1981 were those giving guidance on Accommodation for Elderly People and Accommodation for Adult Acute Day patients. DBS documents were prepared to accompany each of these HBNs, and because of the increased emphasis on the priorities for developing services for the elderly (DHSS, 1971, 1981), it seemed that this need might offer opportunities to undertake further trials of DBS.

The new HBN (DHSS, 1981) provided guidance both for inpatient and day patient accommodation. It was acknowledged that although some hospital projects ideally would include both types of facilities, possibly as a Department of Geriatric Medicine, others might consist of only one. This might be due to the availability of suitable existing accommodation, or perhaps because of phasing when part of the facilities are to be provided later. This situation influenced a decision by the author to prepare separate draft DBS documents for each of the two main elements, ie inpatient and day patient accommodation, rather than a comprehensive to encompass both which would have been rather bulky. Another reason was to avoid project team members being over burdened with unnecessary paperwork.

As the Health Centre DBS trial document had proved acceptable in use, the new drafts adopted a similar approach. The format of these followed a pattern of possible use by a project team, proceeding step by step from the broad overall decisions through to the eventual consideration and selection of activity data (Fig 59). At that stage the DBS was still divided into two separate documents; the first containing all organisational options, and the second lists of activity data with related earlier decisions reference from part one. Extracts of HBN guidance was included on left hand pages, and options/decisions set out on the right hand pages (Figs 60-61). Paragraphs of guidance dealing with cost effectiveness

FIG 59
Design Briefing System: Accommodation for Elderly People and Geriatric Day Hospital - Contents Pages

DESIGN BRIEFING SYSTEM

(formerly Accommodation Design Data)

ACCOMMODATION FOR ELDERLY PEOPLE

GERIATRIC DAY HOSPITAL

Part 1

Contents

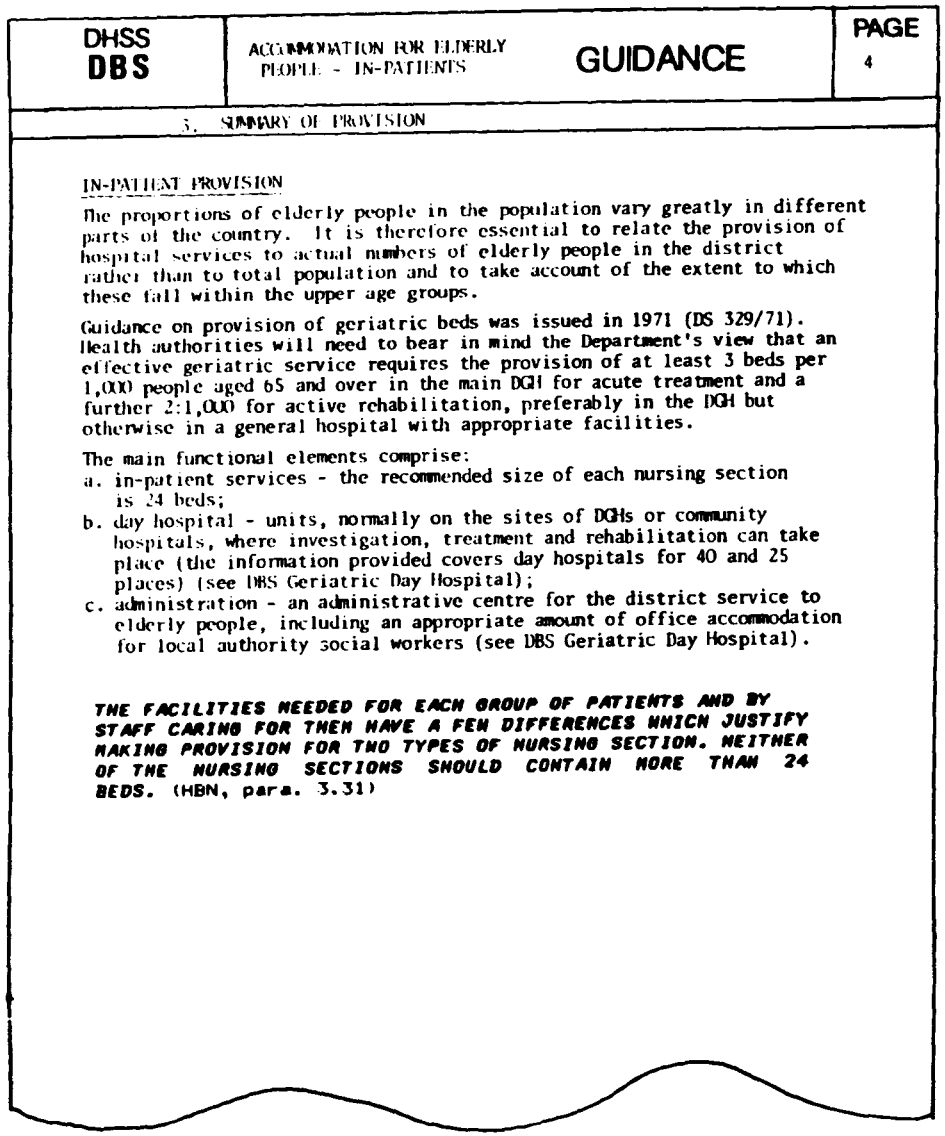
DESIGN BRIEFING SYSTEM

(formerly Accommodation Design Data)

ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS

Part 1

Contents



DHSS DBS	ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS **GUIDANCE**	PAGE 4

3. SUMMARY OF PROVISION

IN-PATIENT PROVISION

The proportions of elderly people in the population vary greatly in different parts of the country. It is therefore essential to relate the provision of hospital services to actual numbers of elderly people in the district rather than to total population and to take account of the extent to which these fall within the upper age groups.

Guidance on provision of geriatric beds was issued in 1971 (DS 329/71). Health authorities will need to bear in mind the Department's view that an effective geriatric service requires the provision of at least 3 beds per 1,000 people aged 65 and over in the main DGH for acute treatment and a further 2:1,000 for active rehabilitation, preferably in the DGH but otherwise in a general hospital with appropriate facilities.

The main functional elements comprise:

a. in-patient services - the recommended size of each nursing section is 24 beds;

b. day hospital - units, normally on the sites of DGHs or community hospitals, where investigation, treatment and rehabilitation can take place (the information provided covers day hospitals for 40 and 25 places) (see DBS Geriatric Day Hospital);

c. administration - an administrative centre for the district service to elderly people, including an appropriate amount of office accommodation for local authority social workers (see DBS Geriatric Day Hospital).

THE FACILITIES NEEDED FOR EACH GROUP OF PATIENTS AND BY STAFF CARING FOR THEM HAVE A FEW DIFFERENCES WHICH JUSTIFY MAKING PROVISION FOR TWO TYPES OF NURSING SECTION. NEITHER OF THE NURSING SECTIONS SHOULD CONTAIN MORE THAN 24 BEDS. (HBN, para. 3.31)

DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS	PLANNING UNIT/DEPT GLR	PAGE 1

EARLIER DECISION	REF	3. SUMMARY OF PROVISION
	A	The total number of in-patient beds provided in the health district for geriatric medicine are/will be:

		Existing No. of beds / location		Additional to be provided No. of beds / location	
3A,3B	(a) acutely ill/active rehabilitation and treatment				
	TOTAL				
3A,3B	(b) continuing care				
	TOTAL				

	B	These will be provided in the following types of nursing sections: (a) type A, for those requiring active treatment ☐ (b) type B, for those requiring continuing active treatment or rehabilitation and slower stream remedial therapy and continuing care ☐ (c)
	C	The number of nursing sections required will be: (a) type A _____, situated (SPECIFY WHERE) _____ (b) type B _____, situated (SPECIFY WHERE) _____ (c)
	D	The number of beds in each will be: (a) type A _____ (b) type B _____

FIG 60
Design Briefing System: Accommodation for Elderly People, Summary of Provision - Options Page (right), Guidance Page (left)

DHSS DBS	ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS	GUIDANCE	PAGE 101

SINGLE BEDROOMS

Each nursing section should contain 2-4 single rooms to accommodate:
a. high dependency patients
b. those likely to disturb others
c. those needing segregation for clinical or other purposes;
and to increase the flexibility in the use of the section in allocating accommodation between the sexes. Two rooms should be sound-contained where patients who may be noisy can be nursed without disturbing others and at least two of these single rooms should be sited near to the staff base. If there is no provision for isolation elsewhere in the hospital, one room should have a W.C. *en suite*. (HBN, paras 3.44-3.49)

MULTI-BED BEDROOMS

The number of multi-bed bedrooms and the number of beds within them may be influenced by local preferences and, in the upgrading situation, by structural constraints. Preferably they should contain 4-6 beds. "Type A" could have two 5-bed rooms which would incorporate a small amount of sitting space for high dependency patients. The provision of a 2-bed room or two adjacent single rooms with a communicating door which can be used by close relatives or friends is a matter which will need to be decided locally. (HBN, paras 3.50-3.57)

PATIENTS' CLOTHING

Storage will be required for patients' personal clothing and any hospital clothing which may be allocated for their use. It is desirable that patients should not be separated from their personal possessions whilst in hospital and therefore storage within each patient's bed space or single room is preferred. This can be achieved by providing a fixed bedside wardrobe for hanging day-to-day clothing and storing a small suitcase, with a small bedside locker for holding small articles such as towel, water jug and glass. A mobile locker/wardrobe has limited capacity and additionally requires secure suitcase and clothing storage elsewhere within the nursing section. (HBN, para. 3.58)

RELATIVES' ROOM

Accommodation is required where the relatives of patients who are seriously ill can rest during the day and sleep overnight. It should be remembered that the relatives themselves may be elderly and disabled.

Rooms should be sited with other relatives' rooms, near to sanitary facilities, but not too isolated from staff. (HBN, para. 3.129)

DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS	PLANNING UNIT/DEPT GER	PAGE 101

THE BEDSPACES TO BE PROVIDED IN EACH TYPE A NURSING SECTION WILL BE:

EARLIER DECISION	REF	ACTIVITY SPACE	NO.	A SHEET	LOCATIONAL RELATIONSHIP ✓
4,8,9A/B	A				
10A,11,	B	SINGLE BEDROOM		B0107	
13A,14C	C				
21B/C,	D	SINGLE BEDROOM (W.C. *en suite*)		B0105	
25D/E,	E				Essential that 50% of beds are close to
26A-D,	F				staff base, with remaining beds as closely
27A/B/C	G				related to staff base as possible
4,8,9A/B	H	MULTI-BED SPACES - 3 BEDS		B0207	
10A,11	I	- 5 BEDS		B0211	
12A,13A	J	- 6 BEDS		B0215	
14C,	K				
21B/C	L				
25D/E	M				
26B/C/D	N				
27A	O				
6D	P	RELATIVES' ROOM		B1302	
13B/C/D	Q				
	R				
	S				
	T				

FIG 61
Design Briefing System: Accommodation for Elderly People, Part 2; Selection of activity data - Options Page (bottom), Guidance Page (top)

were now highilighted in bold type* to alert the project team to the capital and revenue implications of certain decisions. The explanatory introduction to the document (Appendix 13) was supplemented with a colour videotape available on request by health authorities.

Samples of the two DBS documents - Accommodation for Elderly People (in patients and Day Hospital) were issued to the NHS in 1981. Medical and nurse planners at RHAs expressed enthusiasm and indicated that they hoped to apply the method in their regions. Unfortunately, in many situations the planning for projects which encompassed facilities for the elderly was well underway and it was not thought possible to introduce DBS at such late stages. In the event a trial was undertaken in 1982, involving the preparation of a brief for geriatric accommodation as part of a total hospital development. This trial included also the use of a draft DBS document - Rehabilitation - which had been prepared in advance of the Building Note revision specifically for the project. At time of writing these trials are still in progress and therefore at too early a stage for proper evaluation of DBS. However, one in Derbyshire is sufficiently advanced to give some indication of what the project team thought of the new method of briefing in use.

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* This was decided in preference to red type which would have increased reproduction costs of DBS documents

Southern Derbyshire Health Authority

The project selected for the DBS trial was part of a phased development of a city general hospital site for whcih the planning of Phase I (1982/87) had been completed. The first phase consisted of obstetrics and gynaecology beds, a sterile supplies department and a postgraduate medical education centre. The objective of the trial associated with Phase II (1987/92) was to produce a design brief using DBS, for geriatric accommodation. This comprised seven wards totalling 180 beds, and a further ward of 24 beds intended initially for possible surgical patients use. In addition a day hospital of 40 places and the first phase of new rehabilitation facilities were to be provided, plus various support services. The final Phases III and IV to be completed in 1992/2002, are planned to include some acute wards, operating theatres, intensive therapy unit, X-ray, adult acute day patient facilities, a renal unit and additional rehabilitation facilities. By Phase III it was envisaged that the total geriatric beds available in the health district would be about 710, of which 240 were likely to be provided on the city general hospital site.

Eight meetings of the project team had taken place between September 1981 and January 1982 when the functional content of Phase II was agreed. Several members of the project team had during 1981 attended a regional presentation of the DBS

system. They were aware of the availability of DBS drafts for elderly patient accommodation, and as the extent of facilities in Phase II had been reduced to eliminate acute wards (appropriate DBS drafts were not available for this) it was thought that use of DBS might expedite work on the project.

The DBS was demonstrated at the ninth project team meeting in March 1982. As a result it was decided to adopt the method and work was started immediately on the first sections of the accommodation for elderly inpatients document dealing with scope of service and workload. The use of DBS followed the general pattern experienced with previous trials and the project team quickly adapted the system to their own method of working. The Chairman decided that he would use the DBS option pages as a basis for planning meeting agendas. It was accepted that not all members of the present team would be present at every meeting. In order to ensure that they would be able to keep their own copy of DBS up to date it was decided that a note should be distributed after each meeting, giving a synopsis of the options selected, their reference numbers and any action necessary by, or information required from specific project team members in order to complete selection of the options outstanding. The options selected were also recorded in the master copy of the DBS held by the project secretary (Fig 62). Inevitably in a project of this

DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS	PLANNING UNIT/DEPT. GER	PAGE 5

EARLIER DECISION	REF	4. LOCATIONAL RELATIONSHIPS WITH OTHER AREAS OF THE HOSPITAL
	A	The geriatric in-patient section(s) will be located: (a) adjacent to the Geriatric Day Hospital ☐ (b) **adjacent to the Geriatric Day Hospital** (c) **adjacent to the Rehabilitation Department**
	B	The accommodation will be sited: (a) on the ground floor ☐ **as far as possible for Type B Patients (Rehab)** (b) **on the 1st and 2nd floor if necessary for Type A patients (Acute Assessment)**
	C	Access will be required to: (a) the main hospital street ☐ (b) the hospital grounds ☐ (c) an outside area or garden ☐ (d)
	D	**Vehicular** Access and parking facilities will be required for: (a) ambulances ☐ (b) patients' and escorts' cars ☐ (c) disabled persons' vehicles ☐ (d) staff ☐ (e) supply vehicles ☐ (f) emergency services ☐ (g)
	E	The order of priority for planning the Geriatric In-Patients section(s) near the other areas of the hospital is (INDICATE PRIORITIES IN NUMERICAL ORDER): (a) Geriatric Day Hospital ☐ (b) Rehabilitation Department ☐ (c) Out-patient Department ☐ (d) X-ray Department ☐ (e) Clinical Measurement ☐ (f) **Chapel** (g)

FIG 62
Design Briefing System: Accommodation for Elderly People, Derbyshire Trial;'Master'Options Page recording project team decisions

nature obtaining briefing information often took time and a further reminder note was brought to the attention of the project team at regular intervals. (Fig 63)

As mentioned on page 270 a specially prepared draft document 'Rehabilitation' was used in this project to prepare the brief for the Department of Rehabilitation which formed part of Phase II of the project. This meant that there were three design briefs being prepared almost simultaneously by the project team ie Elderly In Patients, Geriatric Day Hospital and Rehabilitation. With the exception of a few temporary ommissions, the Elderly In Patient part 1 document (see page 268) was completed by June 1982 in eight sessions of the project team over a period of about three months. The brief produced is illustrated in Appendix 12. Work on the Geriatric Day Hospital document started in April 1982; the initial selection of options was made in three project team sessions and completed in just over three months by early August 1982.

Subsequently it was decided that the Geriatric Day Hospital would not be built in direct association with the in patient accommodation but provided elsewhere on the site as a separate scheme. However, the resultant brief (Appendix 12) was regarded suitable for this change of direction.

The brief for the Department of Rehabilitation was commenced in May 1982 and although good progress took place, for

Trent Regional Health Authority

[redacted] CITY HOSPITAL DEVELOPMENT - PHASE II

Design Briefing System - Part 1

Outstanding matters requiring action

Date: 14 / 05 / 82

Codes:

A - In-patient Accommodation
B - Geriatric Day Unit
C - Rehabilitation Department

Code	Page	Ref.	Action required	Referred for Action to:
A	20	-	Guidance Number of Nursing Officers	R.T[redacted]/M.D[redacted]
		B(b) (c)	Design Decisions Decision dependent on the number of Nursing Officers	R.T[redacted]/M.D[redacted]
	22	A	Design Decisions Breakdown of Nursing Staff into Full-time and Part-time	R.T[redacted]/M.D[redacted]
		B	Design Decisions Number of Breakdown of Medical Staff	Dr J.T.C[redacted]
	24	A	Design Decisions Number of Staff working at Peak periods: Nursing Other	R.T[redacted]/M.D[redacted] M.W. F[redacted]
B	3	D(b)	Design Decisions Whether Speech Therapy facilities will be provided in the Day Hospital for In-Patients	M.W. F[redacted]
	8	-	Guidance Chiropody facilities	Dr C[redacted]/R.T[redacted]
		E(b)	Design Decisions Chiropody facilities	Dr C[redacted]/R.T[redacted]

Trent Regional Health Authority

[redacted] CITY HOSPITAL DEVELOPMENT - PHASE II

Design Briefing System - Part 1

Outstanding matters requiring action

Date: 28 / 05 / 82

Codes:

A - In-Patient Accommodation
B - Geriatric Day Unit
C - Rehabilitation Department

Code	Page	Ref.	Action Required	Referred for Action to:
A	18	H(a) (b)	Design Decisions Whether bedpans/liners and urinals will be disposable	R.T[redacted]/M.D[redacted]
		G(c)	Design Decisions Whether bedpan disposal system will be disposable or non-disposable	R.T[redacted]/M.D[redacted]
	19	A B C	Design Decisions Dependent on a decision on disposable or non-disposable bedpans/urinals	R.T[redacted]/M.D[redacted]
	20	-	Guidance Number of Nursing Officers	R.T[redacted]/M.D[redacted]
	22	A	Design Decisions Breakdown of Nursing Staff into Full-time and Part-time	R.T[redacted]/M.D[redacted]
		B	Design Decisions Number and Breakdown of Medical Staff	Dr J.T. C[redacted]
	24	A	Design Decisions Number of staff working at peak periods: Nursing Other	R.T[redacted]/M.D[redacted] M.W. F[redacted]
B	3	D(b)	Design Decisions Whether Speech Therapy facilities will be provided in the Day Hospital for In-patients	M.W. F[redacted]

FIG 63
Design Briefing System: Accommodation for Elderly People, Derbyshire Trial; 'Action Required' record

reasons unconnected with DBS there were delays in its completion and work is still proceeding in 1984. Use of the Part 2 DBS documents for the selection of activity data proceeded well and amendments were made as necessary to relevant activity sheets to produce a package for the design team.

Although this project trial of the DBS is still underway, the initial results are encouraging and it is possible to make a preliminary assessment of the new method in use.

In the Derbyshire trial the project teams considered that the application of DBS has enabled them to proceed more systematically through the decisions which they thought needed to be made. Three of the project team members (a sample selected out of interest rather than for being truly representative) agreed to respond to a questionnaire giving their initial assessment of DBS; these are presented in Figure 64. Informal discussions with other project team members has also indicated a favourable reaction.

The majority of the Derbyshire project team members were experienced planners, and were able to base their assessment of the DBS method by comparing it with other RHA briefing methods adopted for similar health building projects in the region. The use of the new method appears to have reduced the time normally required to produce a brief of his nature.

At this early field trial stage DBS seems to satisfy most of the points of the evaluation criteria set out in pages 171 to 174 of this work. This is discussed in the following section.

FIG 64
Design Briefing System: Accommodation for Elderly People, Derbyshire Trial; preliminary responses to evaluation questionnaire

How effective was/were:	Effective→Ineffective: Very	Fairly	Neither	Fairly	Very
1. the introductory explanation?	1	2	-	-	-
2. the colour video illustrating use of DBS?	-	1	-	1	-
3. the document in advance planning of meetings?	2	1	-	-	-
4. the document in covering critical planning questions?	2	1	-	-	-
5. the guidance and decisions in highlighting cost implications?	1	2	-	-	-
6. the document in helping you check earlier decisions?	3	-	-	-	-
7. the document in lending itself to revision of decisions?	-	-	3	-	-
8. the document in feasibility of use?	2	-	1	-	-
9. the decisions in highlighting other decisions	1	2	-	-	-
10. the document in achieving a clear unambiguous record of decisions?	2	1	-	-	-
11. the method in keeping meetings to the point?	1	2	-	-	-
12. the knowledge of decisions to be made before meetings?	1	2	-	-	-
13. the guidance extracts?	1	2	-		
14. the usefulness of the document in recording decisions (rather than minutes)?	2	1	-	-	-
15. the document as an immediate and agreed record to take away?	-	-	1	2	-
16. the usefulness of the document for commissioning and evaluation?	2	1	-	-	-
17. the method in shortening the length of project meetings?	-	-	1	2	-

18/19 Referring to question 17, was this due to DBS methodology?	Yes 1	No 2
20. Did the document lead you to obtain relevant information before meetings?	1	2
21. Did the document contain items which would have otherwise been overlooked?	3	-
22. Was the document difficult to use?	-	3

	all substantial	selective reservations	none
23. How much of guidance should be included in the brief?	-	3	-
24. Are you satisfied with the end result?	2	1	-
25. Was the document of any benefit?	1	2	-

26. Comparison of total planning time Less = 2 Same = 1 More = 0

9. DISCUSSION

9.1 The Brief and Briefing

The first part of this work established the importance of client/user input to a design brief. It highlighted the general lack of a systematised approach to briefing, resulting in briefs which in many circumstances were deficient and in some cases did not even describe how a building was intended to be used. It also examined other existing systems and identified their inadequacy. It was shown that this lack of information to the design team often created misunderstandings of the real user requirements, producing buildings which did not satisfy functional requirements, resulting often in costly contract variations or post contract work to rectify the inadequacies. But in addition to causing delays in the planning stages, incomplete information at the briefing stage had been shown to have serious implications for subsequent commissioning and evaluation of the building.

It was acknowledged that innumerable buildings have been designed and built successfully, both with and without comprehensive briefs, equally many of these are deficient in functional content despite their architectural ingenuity. In the view of the author, this was found to be evident particularly in some hospitals planned in the 1960s and commissioned during the 1970s. It was considered that notable examples of these were some new teaching hospitals

which appear palatial on first impression but conceal unacceptable space standards in patient and clinical areas which represent unforseen and intolerable revenue burdens. It was argued that a brief in a bureacracy (eg the National Health Service), is often more than just a means to design, it is also a link to many other things, eg anticipation of, revenue consequences and therefore budget implications. It was considered that the absence of a satisfactory brief can create long lasting problems for the user and manager of the organisation as well as for budgetting. This is important because if national budget forecasting is to be effective then briefs must assist. Another problem which may emerge is dissatisfaction with the interpretation of the brief by the design team arising from the assumption by the user of what he thought he was going to get, but did not because the brief failed to specify adequately the user requirements.

9.2 Briefing methods

The second part of this work explored whether briefing methods have improved during the past two decades. It established the increasing availability of planning guidance in the form of DHSS Health Building Notes, Technical Memoranda, and the sytems approach embodying activity data and research papers. It concluded that despite this, and provided authorities could afford to build or to renovate, then improvements had not taken place. Indeed, there was a suggestion that the

opposite often prevails and that the type of guidance which has emerged, has tended to stifle innovation in design (Moss, 1977).

Seven well documented examples of the available briefing methods were reviewed, including those which purported to encompass organisational and operational aspects of briefing. But in the majority of situations, the emphasis remained on briefing data which was mainly orientated at far too early a stage (ie before the operational and temporal implications were either explored or understood), toward rooms or activity spaces. Application of a sixteen point evaluation framework (Fig 51) revealed considerable shortcomings in most instances.

9.3 Design Briefing System (DBS)

The improved Accommodation Design Data draft documents and subsequent development of the new Design Briefing Systems, have shown that it is feasible to produce an aid to preparing design briefs which satisfies most of the criteria set out in the evaluation framework (Fig 65 column 7). Further, interrogation of the approach using the evaluation framework developed earlier has tested the hypothesis presented at the beginning of this work, that 'if the method were adopted more generally, a considerable improvement in the quality of design briefs could result'. Trial use of the DBS concept

FIG 65
Comparative evaluation of briefing systems (updated version, of Fig 51, page 209)

Criteria	Greenwich Project	MOPBW Activity Data Method	Harness Project	DHSS Activity DataBase	Australian Action Sequence for Health Facility Planning	S.African Briefing & Design Guides	Accommodation Design Data	Design Briefing System
Simple to use/manage	O	O	O	O	O		✓	✓
Checklist approach		✓				✓	✓	✓
Client/user requirements stated clearly and concisely	✓	✓	✓	✓	O	O	✓	✓
Enables implications of decisions being considered to be highlighted							✓	✓
Enables compatibility with previous decisions to be checked							✓	✓
Enables all possible identifiable choices of planning decisions to be considered	✓		✓	✓		✓	✓	✓
Minimises referral to other guidance material		O	O				O	✓
Briefing information compatible with other information/guidance systems	✓		✓	✓	O		✓	✓
Part of a systematic data chain			✓	✓		O	O	✓
Accommodate choice of alternative options not contained in documentation		✓	✓	O			✓	✓
Enables the incorporation of graphics to convey a particular option	✓		✓				O	O
Enables Whole Hospital policy considerations to be taken into account	✓		✓				O	O
Does not inhibit innovative design	✓				✓		✓	✓
Is not prescriptive	✓						O	✓
Does not assume a standard design solution							✓	✓
Reduces amount of paper work in briefing				O	✓	O	✓	✓
Reduces amount of conventional minutes of project team							O	✓
Flexible in use	O		O	✓			O	✓

Key: ✓ meets requirements; O partially meets requirements

has shown it to be of value, enabling project teams to articulate user requirements in an unambiguous manner to the satisfaction of designers. It is convenient to combine some of the evaluation criteria for the purpose of discussing the DBS trials.

9.3.1 Simplicity of use/check list

In the most recent trial of the DBS 'Elderly Accommodation' document, the simplicity of approach was assessed and confirmed by observation at project team meetings. Some of the representatives from the district health authorities had a limited knowledge of planning, whereas others were experienced planners. The inexperienced found that a check list approach enabled them to visualise more easily the range and extent of options included in DBS which needed to be considered. This prevented the ommission of important aspects which must be considered in preparing a brief. The experienced liked the organised progression which enabled them to anticipate the planning information which needed to be collected and to identify the consultation required in advance of future meetings. The chairman of the project team used the document to facilitate the preparation of agendas.

DBS has the ability to refer the project team back to previous decisions which have a bearing on the option being considered. Project team members found this facility

especially useful as so often in the past, particularly in large projects extending over several years, the effect of these earlier decisions has been overlooked.

9.3.2 Client/user requirements stated clearly

One objective of the new DBS is to present information on user requirements in a clear, unambiguous, easily understood manner. For it has been identified earlier that a critical failure in many previous systems occurred when both client and designer thought they understood each other. The trials have shown that this understanding can be achieved with the minimum of jargon. A good example was illustrated in the Bedfordshire Health Centre trial. It will be recalled earlier in this work that the designer was not present at these project team meetings during the preparation of the brief using the DBS method. The initial sketch plan was based almost entirely on the narrative and selected activity data. That the resultant sketch plan required only minimal ammendment could arguably be attributed in some major part to the unambiguity of the brief.

DBS has demonstrated its ability to improve communication between the project and design teams, by helping to create a mutual understanding of the client/user requirements which need to be taken into account during design. It does not supplant the important dialogue between the client/user and

the designer, but reduces the amount of discussion which in the past has tended to extend the time required to arrive at an agreed brief and subsequently an acceptable design solution.

9.3.3 Implications and compatibility of decisions

This new briefing system provides, for the first time, a method which helps to highlight the implications of decisions as they are being considered. For example the effect of alternative options on existing or future planned services and phases. The expedient adopted of highlighting in bold type the potential revenue cost implications in the extracts of guidance proved of considerable value. It was found that this information alerted a project team to such factors at early stages of the briefing, even though it was not possible to calculate the precise cost of options. Merely identifying those which were revenue intensive served to encourage the project team to consider carefully all the alternatives. For example, when considering the provision of staff changing facilities, the ongoing revenue implications of a manned counter issue compared with automatic machine storage and issue.

It was observed that members of the project team found the 'reference back' facility in DBS of special value. The time scale for the preparation of the briefs in the last two

trials was reduced compared with other similar schemes, but the highlighting of earlier decisions which might have implications for the subsequent selection of other options still proved particularly helpful. For instance, taking an example from the Health Centre document (Fig 53, page 245), the provision of storage space for pharmacy facilities was envisaged for inclusion in the Health Centre (reference-a decision made on page 15, option A).

Another simple example is illustrated in the 'Elderly Patient Accommodation' DBS document (Fig 61, page 269). The need to provide relatives overnight stay rooms will need to follow the selection of options 6D, 13B, C and D on a previous pages 6 and 13, which noted that patients may be accompanied by friends or relatives who may also be elderly.

The highlighting of cost implications and the reference back facility in DBS was found to assist a project team in their decision making to avoid unecessary duplication of facilities.

9.3.4 Identifiable planning decisions, compatibility with other guidance

Because the Health Building Notes provide a basis for cost allowance in health building (accepting that it may be feasible to create a design which can be planned below this cost ceiling), it was logical for DBS to include those

planning options which can be identified in current health building guidance and other DHSS guidance such as Health Equipment Notes and Health Technical Memoranda.

The project teams who participated in the DBS trials found that this did not preclude the inclusion of their own alternatives in the brief. In many instances these were inserted simply to clarify the clients/use requirements (Fig 62, page 273).

The DBS provided a framework so that as these additional options were considered with 'like' options, the logical progression of the brief was still maintained. It was noted that in the trials additional options added to the brief did not result in costs over and above those allowed in existing cost allowances. As the development of DBS progresses, the evaluation of briefs for different projects should enable consideration to be given as to whether some project specific options might be included for general application in revised DBS documents.

9.3.5 Reference to guidance material

Although members of a project team are exhorted to read the complete HBN relevant to the project under consideration, it was found that they did not always do so for a number of reasons. For example, it sometimes proved difficult to

provide every member with a complete copy of the appropriate HBN. Even if members were able initially to read the complete HBN, it was not particularly convenient always to have to refer to it each time information was required. In the trials it was found that the extracts of relevant HBN guidance in the DBS documents were quite adequate in most instances. They provided a reference point when discussing particular options or perhaps helped to identify quickly the appropriate section of the HBN which needed more detailed scrutiny. It was not found that these extracts of guidance were out of context.

Provided the guidance pages of DBS documents are revised regularly this may be of help to users in the field who often are unsure as to which is the latest piece of guidance even if they can get hold of it.

9.3.6 Whole hospital policies - systematic data chain

It will be remembered that DBS trials have been limited mainly to the preparation of briefs at hospital department level. However, sections of the documents, particularly those dealing with supply and disposal requirements, have shown that whole hospital policy considerations can be taken into account in the preparation of the brief.

The systematic data chain envisaged of which DBS will form an important part, is not yet fully realised. The possible development of a whole hospital level document will be discussed later. Meanwhile, it was possible during the trials to utilise policy decisions made at the upper levels of planning, eg. service planning.

The lower part of the data chain, for briefing at departmental level exists already and the use of DBS led users ultimately in a systematic way to the selection of activity spaces, (Activity Data Base) and subsequently to such information as computerised equipment schedules. It was noted also that project teams envisaged that the complete narrative would be used as a basis, certainly for commissioning, and also later for evaluation of the completed building after it had been in use for a period.

9.3.7 Incorporation of graphics

The facility to present information in tabular form was considered to be advantageous. In all the trials this included such aspects as the summary of provision and estimation of staffing numbers for planning purposes. Tabular presentation was particularly useful in the health centre trials. Here, charts were used to encourage the project team to obtain information on present and prospective attendance of patients at General Practitioner surgery

sessions. This information proved of considerable value when, for example, planning the waiting space. However, the extent to which graphics might ultimately be fully utilised in DBS was not realised in the present trials, and is an area for future development.

9.3.8 Non-prescriptive approach/standard design

The DBS Bedfordshire trial showed how a comprehensive brief could be produced in a systematic way (para 9.3.2). Far from being prescriptive (or unduly influencing designs by the inexperienced or the innovator), the brief resulted in an acceptable design with very few ammendments needed to the initial sketch plan. The impression gained was that the designer did not feel unduly that he had been placed in a 'straight jacket' which directed him towards a standard or specific design solution. He considered that his design was one of a number of possible alternatives which could have emerged. However, he did not participate in the preparation of the brief (because, it will be recalled, that the RHA did not allocate design resources until the brief was well underway) and considered there would have been advantages in participating with the selection of activity data. This was not a criticism of DBS which allowed for the participation of designers during preparation of the brief, but was directed to the management of the project.

9.3.9 Reduction of papework and conventional minutes

The general impression gained during field trials of DBS was that use of the system did result in a reduction of paperwork compared with a conventional approach to the preparation of a brief. The bulk of minutes was certainly less; for example the minutes of one meeting of the Derbyshire project team is shown in Figure 66. These were supplemented by an action sheet (Fig 63, page 275), plus a list of the options selected to enable absent project team members to update their own copies of the DBS document.

It was noted that at the beginning of these project trials, there was still the tendency to continue the practice of photocopying and distributing almost every piece of paper discussed at project team meetings. However, the use of DBS had the effect of reducing this considerably which is evident from the material illustrated in Figures 63 to 66.

9.3.10 Flexibility

Perhaps one of the greatest attributes offered by the new briefing is flexibility in use. DBS provides a framework structured in such a way that each project team can use the method in whatever way seems appropriate. Although both teams in the most recent two field trials tended to use the documents as an aid to structuring agendas, each developed

FIG 66
Design Briefing System: Accommodation for Elderly People, Derbyshire Trial; example minutes of Project Team

CITY HOSPITAL DEVELOPMENT II (82/42-48)

Minutes of Project Team Meeting (13)

Date: Friday 1[illegible] --------- 1982

PRESENT:

Mr R. J. W---------- - Capital Developments Division, TRHA (Chairman & Secretary)
Dr J. C-- ------- - SCM Capital Developments, TRHA
Mrs M. D--------- - Assistant Nursing Adviser, ---------- ---- Health Authority
Mr M. J. E--------- - Planning Engineer, TRHA
Mr M. W. F--------- - Assistant District Administrator, ---------- Health Authority
Mr M. J. H--------- - Planning Department, ---------- Health Authority
Mr R. C. P--------- - Liaison Architect, TRHA
Mr R. T---------- - SNO, Capital Developments, TRHA

APOLOGIES FOR ABSENCE:

Mr P. W. D--------- - Liaison Quantity Surveyor
Mr P. M. M--------- - Project Administrator, TRHA

ACTION

82/42 MINUTES OF THE PROJECT TEAM MEETING HELD ON 1982

These were approved as a correct record.

82/43 MATTERS ARISING FROM THE MINUTES

43.1. Physiological (Clinical) Measurement.

It was noted that Mr M-----, Dr C---- and Mr M----- were yet to hold their meeting concerning the provision of Physiological (Clinical) Measurement and support services with reference to this development.

Dr C------
Mr M-------
W-------

82/44 RATIO OF PATIENTS TO WC's

The Team discussed the ratio of WC's to patients and agreed that it should remain at 4 patients to each WC. This would produce a total of 8 WC's for patients on the Acute/Assessment Wards and 7 WC's for patients on the Rehabilitation Wards.

82/45 FIRE SAFETY

The fire safety policy enunciated in Health Building Note 37 and on page 27 of the ADD says that each single room and multi-bed room must be a half hour fire resisting enclosure with a half hour fire resisting door. The Team felt that this would cause extensive problems as far as observation and day to day activities are concerned.

The Team accepted the policy in the interim but would wait the reaction of the Regional Standards Group on this matter.

82/46 DEVELOPMENT CONTROL PLAN

The Team noted that a decision on Ward size, with reference to the --------- General Hospital, ----------, was still awaited. The DCP could not be drawn up until this decision has been taken.

82/47 DESIGN BRIEFING SYSTEM PART I

ACCOMMODATION FOR ELDERLY PEOPLE - IN-PATIENTS.

47.1. Outstanding Items for Confirmation Pages 5-10.

Details of these were given as follows:-

Page 5 - Guidance: POLICY DECISION

Whenever site permits, access to gardens for patients in Type B (Rehabilitation) Nursing Section should be arranged.

Page 5 - Design Decisions.

B - (a) On the ground floor, as far as possible, for Type B patients.

(b) On the first and second floor, if necessary, for Type A patients.

Page 6 - Guidance: POLICY DECISION

Overall ratio of WC's to patients to be 1:4.

The Team has now completed confirmation on pages 1-10 of the DBS Part I.

47.2. Confirmation on Pages 11-20

The Team agreed and confirmed pages 11-17 with the advice on 14F(b) supplied by Mr F----------.

The Team were unable to confirm pages 18-20 as certain decisions remained outstanding for action by Mr T-- ---- --- on:-

18G	19C
18H	20 Guidance
19A	20B(c)
19B	

ACTION

ACTION

47.3 Initial Discussion of Pages 21-30

These were discussed by the Team. Mr w--------- agreed to issue his usual record of the dsicussions and outstanding actions.

(POST MEETING NOTE:

Circulated 19th April 1982)

82/48 FUTURE MEETINGS

48.1 Date of Next Meeting

Date: Friday 3 ----------
Time: 9.45 am (ALL DAY)
Venue: Room 3, Conference Suite,
---------- Hospital,

48.2 Confirmation of Programme of Future Meetings.

Date	Time	Venue
Friday 1 --------	9.45 am (all day)	Committee Room 2 ---------- Sheffield
Friday 2 --------	9.45 am (all day)	Committee Room 2 ---------- Sheffield
Friday 1 --------	9.45 am (all day)	Committee Room 2 --------- Sheffield.

FIG 66 (cont'd)
Design Briefing System: Accommodation for Elderly People, Derbyshire Trial; example minutes of Project Team

their own method of operation and completion of the DBS as discussions proceeded. The logical progression of the system was still maintained and the resultant brief (Appendix 12) demonstrates continuity of documentation can be maintained through to the commissioning and evaluation stages of the project.

9.4 Recommendations for the general use of DBS

Experience with the DBS field trials has reinforced the view that the principle of the proposed methodology is applicable to the preparation of design briefs for health buildings in the NHS, or indeed similar facilities in the private sector. Although field trials have indicated that the overall format of the new system is suitable for most planning situations, it is recognised that in developing the methodology DBS documents are 'tailor-made' for use in planning specific departments or specialist areas of a health building. Ideally such documents should be subjected to a formal evaluation before becoming definitive and made available for general use.

But to achieve such an objective for all draft documents would be impracticable because of the time scale involved, which in the case of a health building project could extend over several years. Despite this, it is considered that there is sufficient positive evidence to make DBS documents

more generally available. Any ammendments or additions necessary to DBS resulting from further field trials could then be incorporated after a period of use.

It was decided that the best way to meet the demand for the new methodology was by arranging to issue the Design Briefing System in conjunction with new or revised DHSS Health Building Notes as a two-document package. This would then ensure a general awareness of its availability for trial use. This is now underway and the first DBS documents have been made available including Accommodation for Staff Changing, and Accommodation for Children. (Appendix 14). These follow the original issue of DBS Health Centres, Accommodation for Elderly People - inpatients and day hospital, and adult acute day patients.

For purposes of reproduction it was decided to combine parts 1 and 2 into one document. (See page 269 and Appendix 14). The disadvantage of this is that project team members have their attention drawn to the part intended to be used for the selection of activity data before all organisational options have been selected. However, it is considered that provided the project team chairman emphasises the importance of ignoring this section of the system until later in the project, no serious disadvantage should result. The possible extension of the methodology to whole hospital decisions is merely indicated in the following section of this work.

10. THE WAY FORWARD

At the beginning of this work it was envisaged that the hypothesis might be developed further to demonstrate that the DBS methodology might be extended from departmental level to whole hospital and ultimately strategic and operational planning. It was thought that the use of such a system could result in more efficient service and capital planning in the National Health Service, and establish a user requirement data base from which future decision making could benefit. In the event, because of a demand from the NHS to develop the departmental approach of DBS, it was only possible to find time to carry out some initial exploratory work on the possible future development and application of the system.

10.1 Whole Hospital decisions

Of more immediate concern is the development of a means of linking together the various DBS departmental briefs to take into account whole hospital policies and planning implications. To some extent the format for this has been achieved with the formulation of the Health Centre DBS, as mentioned on page 243, for the document could be regarded as a combination of what was equivalent to departmental and whole hospital DBS documents. However this is on a small scale and would need to be tested for use in hospitals.

Some exploratory work has been carried out on a possible DBS whole hospital document. Figure 68 lists an outline of the possible content envisaged, which is not exhaustive and ranges from the functional content and scale of the project, to such aspects as supply, storage and distribution, and preliminary staffing estimates.

Because of the emergence of DBS documents for various departments of a DGH, it was considered important to try and develop a Whole Hospital 'linking' document along these lines. Figures 69 to 71 give example pages from the supplies section of the draft Whole Hospital DBS document. Similar examples are those dealing with preliminary staffing estimates for planning purposes (Fig 72), and patient care (Fig 73).

Work on the development of this aspect is still at an early stage but one possible avenue of exploration is already being considered which presents the associated guidance in the form of options rather than just a statement of definitive 'norms'. An example of this is a guide to the method of calculating the number of operating theatres required, taking into account both needs and ranges of provision (Rawlinson, 1981). Further examples covering a whole range of hospital facilities are being developed. The emergence of such documents together with the system applied at a higher level of planning should serve to encourage the use of DBS, and provide an important link in the chain of planning procedures.

FIG 67
Design Briefing System: Whole Hospital Data - possible structure

Design Briefing System

WHOLE HOSPITAL DECISIONS

FIG 68
Design Briefing System: Whole Hospital Data - possible structure: Supplies, Scope of service - Options Page (right), Guidance Page (left)

DHSS DBS	WHOLE HOSPITAL GUIDANCE	PAGE 34

6. SUPPLY, STORAGE AND DISTRIBUTION

SUPPLY, STORAGE AND DISTRIBUTION

A supply system should provide a good service to the consumer and must be reliable, flexible and easily adaptable.

With the exception of pharmaceutical items and medical equipment required for an emergency, all storage of goods should be centralised in order to achieve maximum efficiency and reliability in purchasing, receiving, storing and issuing goods.

The opportunity to reorganise the whole of the local supplies system, laundry, C.S.S.D. and stores should be considered.

The costs involved in distributing stores are not sufficient to justify a very detailed study of the distribution of each individual item. Efficient delivery will depend on the sensible grouping of loads at the distribution centre to avoid wasteful use of manpower and equipment.

References:
N.C.B. ORE Report on supplies within a New District General Hospital, 1970
Nucleus Planning and Design Brief - Supplies Distribution Centre/Central Linen area
Best Buy Hospital, Frimley - Rationalisation of Planning and Design.

INDUSTRIAL ZONE SERVICE

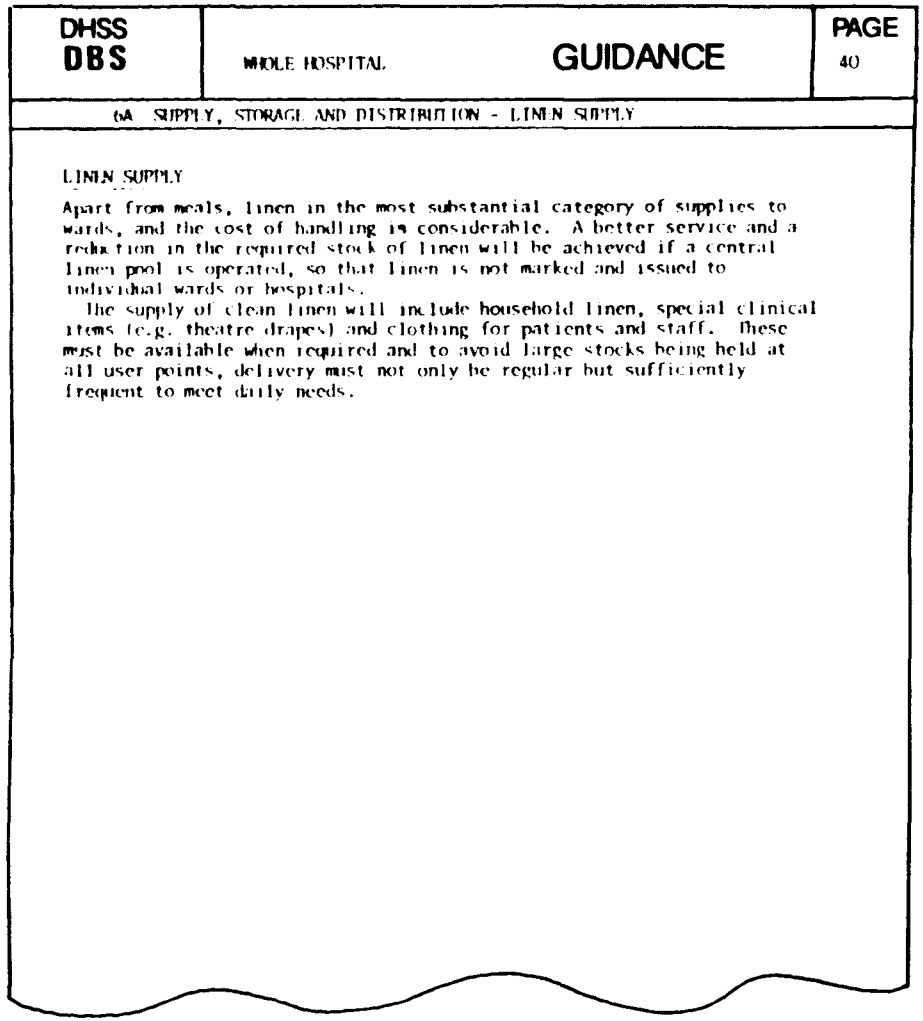
There should be a distinct industrial zone incorporating the following services:
- laundry, linen and uniform (including issue and storage)
- H.S.D.U./C.S.S.D.
- Central Food Preparation in the event of frozen food service
- Pharmacy - bulk manufacturing and storage
- Central Maintenance for vehicles and equipment (dealing with all but day-to-day maintenance)
- Bulk stores, for some items

Such industrial zones, and the associated bulk stores, should be sited to conform to the regional development plan and current supplies policy, there does not have to be a bulk store in each zone.

These services do not need to have a close physical relationship with the hospital(s) they serve and there is greater efficiency and economy to be found in large-scale operation. Site costs in the provision of engineering services and access may be reduced if the industrial zone is on the same site as a large hospital unit, although not necessarily the largest unit it serves.

DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS WHOLE HOSPITAL	PLANNING UNIT/DEPT WH	PAGE 34

EARLIER DECISION	REF	6. SUPPLY, STORAGE AND DISTRIBUTION
		6.1 SCOPE OF SERVICE
	A	Services to be supplied by the industrial zone service to the hospital will be: (a) laundry, linen and uniform (including issue and storage) (b) H.S.D.U. (c) central food preparation (frozen food service) (d) central maintenance for vehicles and equipment (e) bulk stores for some items (f)
	B	On-site services to be provided by the hospital will include: (a) laundry, linen and uniform (b) H.S.D.U. (c)
	C	Provisions for the central kitchens will be obtained from: (a) regional stores (b) outside caterers (c) a bulk food preparation centre (d) commercial sources (e)



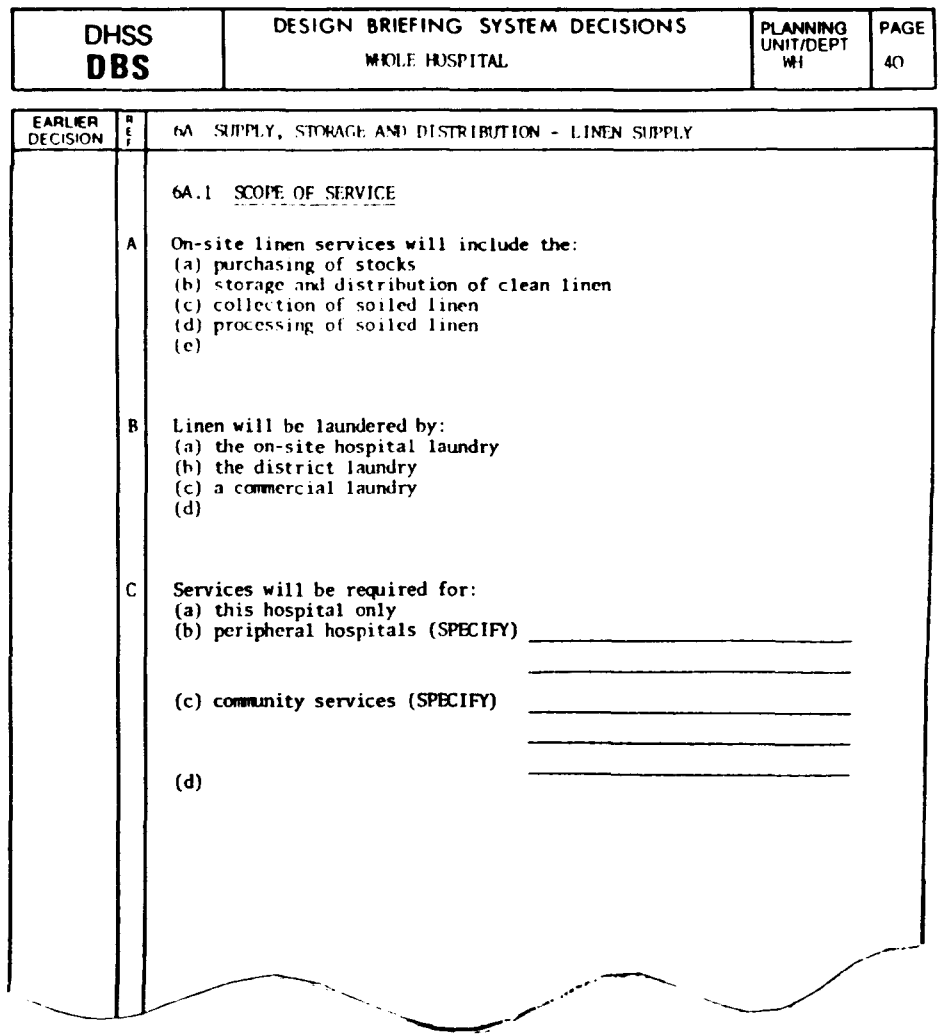
DHSS DBS | WHOLE HOSPITAL | GUIDANCE | PAGE 40

6A SUPPLY, STORAGE AND DISTRIBUTION - LINEN SUPPLY

LINEN SUPPLY

Apart from meals, linen in the most substantial category of supplies to wards, and the cost of handling is considerable. A better service and a reduction in the required stock of linen will be achieved if a central linen pool is operated, so that linen is not marked and issued to individual wards or hospitals.

The supply of clean linen will include household linen, special clinical items (e.g. theatre drapes) and clothing for patients and staff. These must be available when required and to avoid large stocks being held at all user points, delivery must not only be regular but sufficiently frequent to meet daily needs.



DHSS DBS | DESIGN BRIEFING SYSTEM DECISIONS WHOLE HOSPITAL | PLANNING UNIT/DEPT WH | PAGE 40

EARLIER DECISION | REF | 6A SUPPLY, STORAGE AND DISTRIBUTION - LINEN SUPPLY

6A.1 SCOPE OF SERVICE

A On-site linen services will include the:
(a) purchasing of stocks
(b) storage and distribution of clean linen
(c) collection of soiled linen
(d) processing of soiled linen
(e)

B Linen will be laundered by:
(a) the on-site hospital laundry
(b) the district laundry
(c) a commercial laundry
(d)

C Services will be required for:
(a) this hospital only
(b) peripheral hospitals (SPECIFY) _____
_____
(c) community services (SPECIFY) _____
_____
_____
(d)

FIG 69
Design Briefing System: Whole Hospital Data - possible structure; Supplies, Linen supply - Options Page (right), Guidance Page (left)

6B SUPPLY, STORAGE AND DISTRIBUTION - STERILE SUPPLIES (contd.)

ORGANISATION

The concept of providing sterilisation facilities at a central unit serving hospital beds as well as community health service needs is now generally accepted.

In order to obtain the economic advantages of large-scale production and the maximum use of sterilising equipment, as much as possible of a hospital's need for sterile supplies should be met from a centralised unit.

Of those items which at present need to be sterilised by hospital units, the sterilising of items (2) and (4) mentioned on the previous page and the sterilising of bottles for milk feeds could be done at an area C.S.S.D., which need not be on the hospital site.

The possibility of centralising all on-site sterilising in a single unit, which would be able to give a more reliable service with economies in equipment and staffing costs than would be possible with separate units, is worthy of consideration. There are also organisational advantages in combining such a hospital sterile supply unit with a central equipment cleaning unit, i.e. a Sterilising and Disinfecting Unit.

DISTRIBUTION

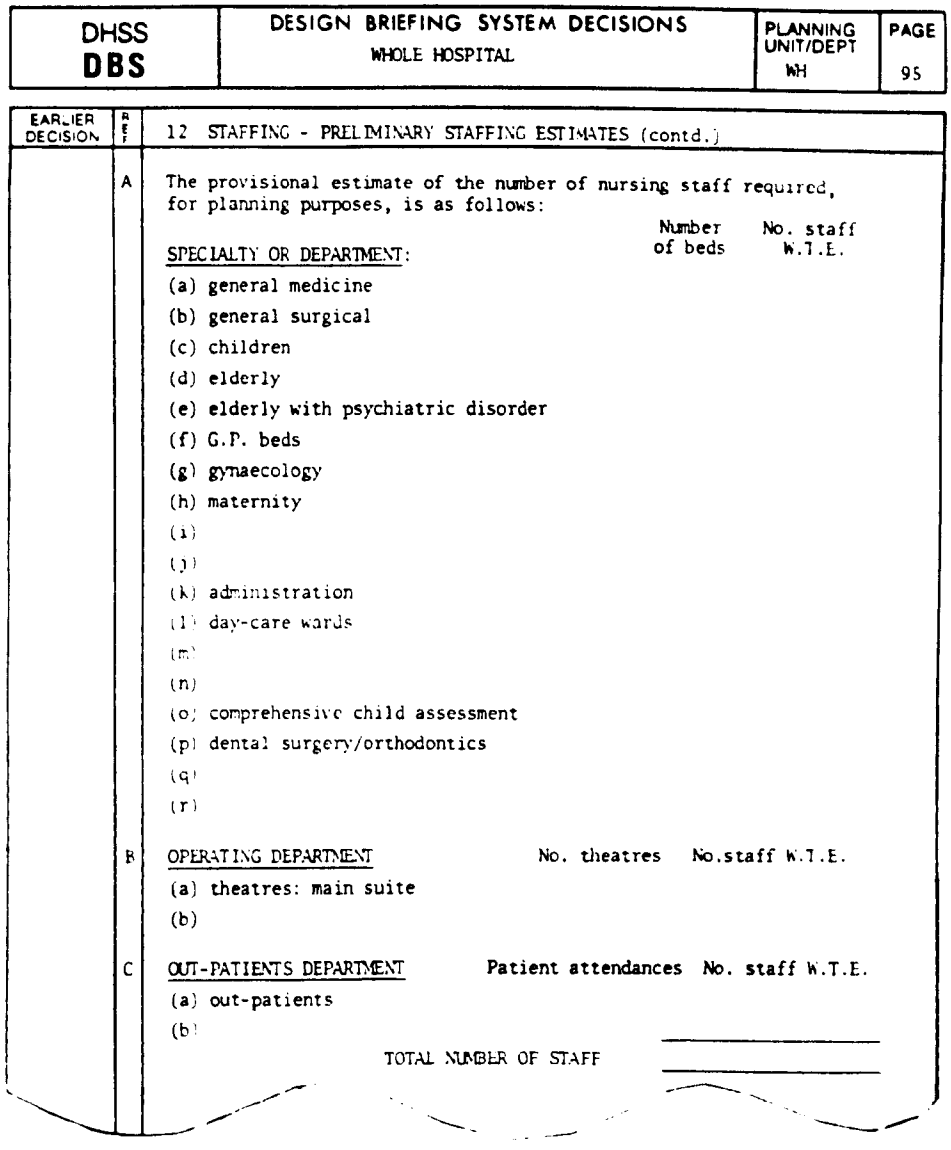
The nature of the demand for C.S.S.D. supplies - regular demand for a small number of items - leads to a consideration of topping-up or pre-view topping-up systems. The handling problem is not large enough to justify trolley exchange. The choice between topping-up and pre-view topping-up depends on the nature of the C.S.S.D. packs themselves. If sterilised boxes are used, then the collection of empty boxes would provide a convenient method of pre-view. Where the C.S.S.D. is off-site, the use of topping-up requires a distribution store at the hospital. This could then provide reserve supplies for emergency use.

A study has been made of the distribution effort and storage space involved in a topping-up system in order to determine the best frequency of replenishment. It seems, on the assumptions made, that a daily supply to wards is the most economic frequency. In practice it may be found that some wards or departments, such as the X-ray department, will not require C.S.S.D. supplies every day. The delivery round could then be modified to exclude them on some days.

At some hospitals visited, sterilised instruments are exchanged one-for-one in a separate daily round. Since these rounds deal with the same supply department and the same nursing sections, effort may be saved by combining them. This would be particularly valuable where the C.S.S.D. is some distance from the hospital.

EARLIER DECISION	REF	6B SUPPLY, STORAGE AND DISTRIBUTION - STERILE SUPPLIES (contd.)
		6B.2 ORGANISATION OF SERVICE
	A	Replacement medical/surgical equipment will be obtained from: (a) the central hospital stores (b) the central sterile supply department (c) the hospital sterilising and disinfecting unit (d)
	B	Sterile supplies will be stored in: (a) central hospital stores (b) the hospital sterilising and disinfecting unit (c) the operating department (d) other departments/units at clean utility room level (e)
	C	Processed sterile stock will be issued to the operating department: (a) on demand (b) by a topping-up system (c) by standing order (d) by requisition (e) by a counterfoil system (f)
	D	Sterile supplies will be distributed to other users (other than the operating department): (a) on demand (b) by a topping-up system (c) by standing order (d) by requisition (e) by a counterfoil system (f)
	E	This distribution will be made: (a) daily (b) twice daily (c)

FIG 70 Design Briefing System: Whole Hospital Data - possible structure: Supplies, Sterile Supplies - Options Page (right), Guidance Page (left)



DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS WHOLE HOSPITAL	PLANNING UNIT/DEPT WH	PAGE 95

EARLIER DECISION	REF	12 STAFFING - PRELIMINARY STAFFING ESTIMATES (contd.)		
	A	The provisional estimate of the number of nursing staff required, for planning purposes, is as follows:		
		SPECIALTY OR DEPARTMENT:	Number of beds	No. staff W.T.E.
		(a) general medicine		
		(b) general surgical		
		(c) children		
		(d) elderly		
		(e) elderly with psychiatric disorder		
		(f) G.P. beds		
		(g) gynaecology		
		(h) maternity		
		(i)		
		(j)		
		(k) administration		
		(l) day-care wards		
		(m)		
		(n)		
		(o) comprehensive child assessment		
		(p) dental surgery/orthodontics		
		(q)		
		(r)		
	B	OPERATING DEPARTMENT	No. theatres	No. staff W.T.E.
		(a) theatres: main suite		
		(b)		
	C	OUT-PATIENTS DEPARTMENT	Patient attendances	No. staff W.T.E.
		(a) out-patients		
		(b)		
		TOTAL NUMBER OF STAFF		

FIG 71
Design Briefing System: Whole Hospital Data - possible structure; Staffing estimates for planning purposes - Options Page

DHSS DBS	DESIGN BRIEFING SYSTEM DECISIONS WHOLE HOSPITAL	PLANNING UNIT/DEPT WH	PAGE 13

EARLIER DECISION	REF	5. PATIENT CARE
		5.2 IN-PATIENTS
	A	Admission of in-patients may be: (a) from the waiting list by prior arrangement (b) on an emergency basis via the family practitioner, accident and emergency department or out-patients department (c) following a domiciliary visit (d)
	B	Patients will be grouped according to: (a) degree of illness and dependence (b) clinical specialty (c) age (d) sex (e)
	C	Degree of illness and dependence classifications will be: (a) intensive therapy (b) high dependency (c) low dependency (d) self care (e)
	D	Patients will be admitted to: (a) the unit/nursing section offering the appropriate level of care according to the severity of their illness (b) nursing sections according to clinical specialty (d)
	E	Patients will then be: (a) moved according to the progression of their illness (b) kept in that nursing section for the whole of their stay in hospital (c)
	F	Male and female patients may be accommodated in: (a) separate multi-bed rooms or single rooms in the same nursing section (b) separate nursing sections (c)

FIG 72
Design Briefing System: Whole Hospital Data - possible structure; Patient care principles - Options Page

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