DESIGN GUIDE

Accommodation for adults with acute mental illness

1993

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Accommodation for adults with acute mental illness

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About this publication

This Design Guide discusses the issues and design implications which arise when planning health service accommodation for adults with acute mental illness. It results from work undertaken by an NHS Estates team which found that:

- services for mentally ill people continue to develop with a variety of philosophies of care;
- at present there is considerable debate about the place, functions and ethos of an adult acute unit within a community-based mental health service.

For these reasons this Design Guide discusses the principles and issues which underly the development of the adult acute unit as a component of a mental health service, including the effects of philosophy and operational policies on design, and explains why standard design solutions could be too restrictive.

Some designs which emerged from the team’s work and some projects now under way in the NHS are analysed.
Foreword

Mental illness has been identified by the Government as one of the five key areas in the White Paper ‘The Health of the Nation’. One of the targets for the mental illness key area is “To improve significantly the health and social functioning of mentally ill people”. The quality of the estate in which we provide care for mentally ill people is clearly of considerable importance in providing a suitable therapeutic environment and I hope that the publication of this Guide will make a tangible contribution to achieving this target.

The Guide is supported and endorsed by the Health Care Division of the Department of Health responsible for policy for people with mental illness. It has been produced by NHS Estates, an Executive Agency of the Department of Health, which has wide experience in planning for mental health. Its purpose is to assist authorities in a rapidly developing field, where the design of the adult acute mental illness unit, on or off a district general hospital site, is continuing to be refined. We would wish to continue to encourage evaluation strategies in support of service development initiatives to ensure that schemes are not repeated without due consideration.

This Design Guide should be of great help to health authorities, NHS trusts and other agencies involved in planning and modernising mental health services.

Andrew McCulloch
Assistant Secretary
Health Care Division
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Acknowledgements

This Design Guide was written for NHS Estates by
R W Chapman MSc BA RGN RMN RNT.

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  workshops, meetings and visits;
- the health authorities, NHS trusts and directly
  managed units (DMUs) who provided access to policy
  documents, and service and building plans;
- the NHS Estates team.

Photographs in the text

Cover  Hemel Hempstead General Hospital
       Architects: Design Team Partnership
a.     St Mary’s Hospital, Isle of Wight
       Architects (Nucleus): Ahrends Burton and Koralek
       Architects (Mental Illness Unit): Wessex Regional
       Health Authority
b.     East Surrey Hospital
       Architects: Hospital Design Partnership
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       Architects: Halliwell Montgomery
       Anderson Architects Ltd
1.0 Introduction

1.1 Health Building Note (HBN) 35 - ‘Accommodation for people with acute mental illness’ (1988, HMSO), describes the adult and elderly acute mental illness units that were expected to be provided as part of the range of facilities required for a mental health service. Immediately after its publication, work began on a Nucleus data pack for a unit for the assessment and short term treatment of elderly people with mental illness. This was issued as Data Pack 31 in October 1989 and the ‘Planning principles and design description’ (PPDD) section from the pack was prepared as a separate document and widely circulated.

1.2 The NHS Estates team which had prepared Data Pack 31 then sought to develop a Nucleus data pack for a unit for adults with acute mental illness. This work, which was also based on HBN 35, included:
   a. consultation with colleagues in the Department of Health;
   b. visits to districts developing such units;
   c. a workshop with colleagues from the National Health Service, together with visits for discussion to a range of service providers, planners and developers.

After considerable work, and because of the variety of mental health services being developed, the team concluded that a Design Guide would be a more appropriate way of discussing planning and design issues for an adult acute unit.

1.3 The Nucleus hospital context is largely used in this Design Guide because:
   a. it was the initial purpose of the team to produce a data pack;
   b. in all appropriate cases, the Nucleus system must be considered as an option for the planning and design of health building schemes (Capricode Stage 1: Approval in Principle);
   c. it is likely that some project teams may require to design their own solution in the absence of a data pack. This was the situation in respect of a number of the case studies in Appendix 1 (see, for example, paragraph 9 of the description of the Bromley design solution).

However, this Design Guide is presented to be of use in the development of an adult acute unit wherever located, in purpose-built or adapted premises. Examples from the field (see Appendix 1) include non-Nucleus schemes.

Aims

1.4 This Design Guide discusses the issues and design implications which arise when planning adult acute units. In doing this, the team’s work has been used to:
   a. indicate underlying principles of, and emerging ideas about, mental health services;
   b. trace and indicate the main features of some of the service developments which have taken place since HBN 35 (1988) was issued;
   c. show a range of planning and building design solutions which emerge, with some of their major implications;
   d. illustrate why Nucleus design solutions could be too restrictive;
   e. present some examples of recently planned hospital accommodation.

1.5 It aims to assist two sets of planners to work effectively together. These are:
   a. mental health service workers who, as service planners and developers, are members of a project team for an adult acute mental illness unit. They bring both service knowledge and professional expertise to the enterprise, much of which are likely to be “taken for granted”, and left implicit;
   b. capital planners who, in the context of this Design Guide, are responsible for a general hospital (very possibly a Nucleus hospital) and its development control plan (DCP), which includes an adult acute mental illness unit. The Design Guide will help them “put the right questions” to the mental health professionals.

A further aim is to make explicit considerations which might otherwise be “taken for granted”.

1.6 In addition, it stresses an important point of practice: it is important that a project team arrives at a clear explicit brief by full debate, using sketch drawings as necessary, before any definitive design work is begun.

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1 The Nucleus data pack is a product of the Nucleus hospital briefing and design system. See Appendix 2 for a summary description of a Nucleus hospital.

2 For simplicity the terms “the team” and “adult acute unit” are used to describe respectively, the NHS Estates team which carried out the work, and an acute mental illness unit for adult male and female patients with an age range of 16 to 65 years.
2.0 Principles

2.1 This chapter firstly explores the implications of the phrase in paragraph 1.1 of Health Building Note (HBN) 35:

“Services for mentally ill people are in a state of rapid development, with wide ranging philosophies of care. . . .”

It then identifies the philosophy of service assumed by the team.

2.2 The overall service being developed in a particular place is determined by the agreed philosophy of care. This can be a problematic issue as individuals in local services may have widely differing views which are often held dogmatically and inflexibly. For example, Symonds (1991) comments:

“The controversial nature of the psychiatric enterprise is believed to be due to the lack of consensus regarding notions of mental health. . . .”

However, the general aims for a comprehensive service drawn up by MIND (1983) can assist (see Table I), and accord with Government policy. In addition, Wilkinson and Freeman (1986) develop a definition of overall mental health services for adults, as does Hirsch (1988).

2.3 Nevertheless, the place of the adult acute unit within an overall mental health service is still a matter of debate. Mayou (1989) noted that:

“The care of major mental illness returned to general hospitals for compelling educational and clinical reasons. . . . It is now being practised in many different ways . . .” but that it “. . . requires proper evaluation.”

Such a view seems to imply the retention of a hospital based service, and general hospitals remain the most common sites for adult acute units. However, at a few places, experiments with units not on general hospital sites are under way. Furthermore, there has also been dissatisfaction with the size and location of a significant number of acute units.

2.4 As community services have become more widespread and developed, the use of hospital in-patient accommodation by people in the acute phases of mental illness has changed, and become a matter for debate, see for example Peck and Scott (1990). As long ago as 1980 Dick (HAS 1980) noted:

“I can confirm that the trend in active psychiatric services is to use fewer beds, either because of reduced admissions or briefer length of stay. What matters is the number of treatment places available, not how many patients sleep overnight in the hospital, that is, in ‘beds’. Readily available day hospital places and earlier intervention by community teams avoid some admissions and very considerably shorten others.

The growing use of depot tranquillisers throughout the 1970s has demonstrably changed admission patterns.”

This was taken into account in Health Building Note (HBN) 35, which suggested hospital accommodation would be needed for “short term care and treatment of adults who are acutely mentally ill”.

2.5 Thus the adult acute unit has a very specific function in the context of an overall service: to provide the short term care and treatment which cannot be provided, or is not practicable, in the community. Arce and Vergare (1985) concluded that, in the North American context:

“. . . a number of studies have demonstrated that many patients in acute stages of psychiatric illness can be treated as effectively, more economically, and in a shorter period of time in a community setting . . .”

with the added benefit that:

“. . . such care has also proven to be less alienating and disorganising than admission to psychiatric hospitals.”

<table>
<thead>
<tr>
<th>Table 1. MIND’s eight principles</th>
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<tbody>
<tr>
<td>A local comprehensive service is one which:</td>
</tr>
<tr>
<td>1. Values the client as a full citizen with rights and responsibilities, entitled to be consulted and to have an active opportunity to shape and influence relevant services, no matter how severe his or her disability.</td>
</tr>
<tr>
<td>2. Aims to promote the greatest self-determination of the individual on the basis of informed and realistic choice.</td>
</tr>
<tr>
<td>3. Aims to provide and evaluate a programme of treatment, care and support based on the unique needs of the individual, regardless of age or severity of disability.</td>
</tr>
<tr>
<td>4. Aims to minimise the dependence of the client on professional resources, but which does not allow this as an excuse to withdraw appropriate services.</td>
</tr>
<tr>
<td>5. Aims to meet the special needs arising from disability through a locally accessible, fully co-ordinated multi-disciplinary service offered by appropriately trained staff.</td>
</tr>
<tr>
<td>6. Is easily accessible locally, and delivered, wherever possible, to the client’s usual environment.</td>
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<tr>
<td>7. Plans actively for those in institutions to reintegrate into society if they so wish.</td>
</tr>
<tr>
<td>8. Aims to enhance the individual or collective capacity to cope with or alleviate distress.</td>
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</tbody>
</table>
Figure 1. Illustration showing comprehensive community mental health service, including Nucleus hospital with adult and elderly acute units.
In England, Dean and Gadd (1990) report the success of home treatment of acute mental illness in an inner city multi-ethnic sector of a district (population 25,728 in 1981 census) which reduced acute unit bed needs from 17 to 5 over a two year period by developing a community service, concluding:

“Home treatment is feasible for most patients with acute psychiatric illness . . . admission is determined more strongly by social characteristics of the patient and the referral than by illness factors. Admission will still be needed for some patients.”

Merson et al. (1992) report similar results in a controlled trial which showed:

“Patients referred to the community service showed greater improvement in symptoms and were more satisfied with services than those in the hospital-based service. Patients treated in the hospital-based service spent eight times as many days as psychiatric in-patients as those treated in the community-based service.”

These findings correspond with other examples such as Acorn Lodge, Cosham, which has ten acute beds for a population of 45,000, and the example in Chapter 4 of four acute beds for a population of 30,000. However, whilst studies suggest community alternatives for many with acute mental illness, there remains a group for whom this is not a safe option, and who require admission to an acute unit despite intensive case management, see, for example, Morgan (1992).

2.6 The steady trend of reducing acute bed needs as community-based services develop added to the concern of the team not to develop a design solution, and a Nucleus data pack, for an adult acute unit at a general hospital which was, as HBN 35 says:

“...too large, too restrictive in use... wasteful of capital and revenue, as well as inhibiting the development of a sound, community-based service.”

Thus the adult acute unit is but one component of the range of types of accommodation which is needed for such a service. Other components are described for example in ‘Planning community-based accommodation for mentally ill people’, Medical Architecture Research Unit (MARU) (1987) and ‘Residential Needs for Severely Disabled Psychiatric Patients’, Department of Health (1991). There is considerable distribution of this range of accommodation, as illustrated in Figure 1. Taken together, these would meet the objectives for mental illness services outlined in ‘The Health of the Nation’ (1992) as:

“... an appropriate balance of prevention, treatment and rehabilitation and the development of services in both primary and secondary care, as well as action outside the health and social services” (paragraph C.8) by “development of comprehensive local services” (paragraph C14).

2.7 The following general statements of principle were used by the team as “philosophy of service”. The adult acute unit:

a. supports a coherent, comprehensive, community-based mental health service;

b. provides accommodation for the assessment and short term care and treatment of people with acute mental illness, when other ways of delivering these are inappropriate or not feasible;

c. meets the needs of people who in the main are in the acute phases of major mental illness and highly dependent. In many cases these acute phases will be relapses of chronic, possibly severe, disorders;

d. supplies the important prerequisites for effective care and treatment - security, privacy, peace and safety, in a domestic, non-clinical environment, with adequate space, indoor and outdoor;

e. has operational policies which provide individual care and treatment plans, with primary nursing, and strong links with other components of the mental health service and other agencies, as the bases of effective care and treatment.

These emerged during the team’s work. With the more detailed principles discussed in Chapters 3 and 4, they were used to analyse the design solutions featured in Chapter 5 and Appendix 1.

2.9 Chapter 5 includes the team’s “perceived best solutions” for a Nucleus design, based on these principles. However, there was not enough general agreement about how the principles translated into operational policies for a Nucleus data pack to be developed.
3.0 Planning issues

3.1 The planning issues discussed in this chapter are in a rough sequential order, though in reality they are iterative, as the team found when seeking information as a basis for design. They “take for granted” the need for the end product to be a domestic, non-clinical design solution. Other underlying issues are time-scales of project and service development.

The catchment population (locality)

3.2 The population to be served with its demography is basic to all planning and includes:

- size, that is, population, both current and likely future (projected) change;
- age distribution, including children, adults, elderly people and projected changes;
- current and projected epidemiology.

The current and projected size of the adult (16 to 65 years) population is of major significance. One service delivery feature should be explicit—the cut-off age between adults and the elderly for mental illness services. The age for referral to psychogeriatric services instead of to adult services, for functional mental illnesses, is known to vary between localities and affects the size of the adult acute unit.

3.3 The characteristics of the catchment area, physical and social geography, and their relationship to the general hospital, raise issues of links and communication. Other issues arise from how local authorities arrange and plan services, and how other agencies function and are developing.

The mental health service

3.4 The required base-line is a clear statement of the current service, how it is organised, delivered, sectored, and the links with the local authority and other agencies. However, the major issue is the service development projected. There are three aspects to this:

a. what developments the relevant agencies and the current mental health service providers would wish to achieve, that is, the agreed philosophy of care and the overall service envisaged;
b. what is perceived as realistically delivering the envisaged service;
c. the pace of change. This is likely to have substantial consequences, as the lead-time for changing services and their delivery is shorter than the lead-time of a building project.

The pace of change and its effects are exemplified by Dean and Gadd (1990), Merson et al. (1992) and the projects described in Appendix 1.

3.5 Clarity about the sorts of services it is planned to provide at sector level, probably based on some form of community mental health centre (CMHC), is critical. In some places community mental health centres provide residential accommodation in addition to being the bases for sector services and providing for day patients. Is this to be provided for the catchment population? If so, for what purposes? One purpose is to provide for “crisis care” at sector level. Such care is, broadly, synonymous with acute care, hence such sector provision reduces the need for accommodation in an adult acute unit.

3.6 These issues are relevant to how the capital allocation to mental health is distributed to provide accommodation, and the bid for space in a general hospital development for an adult acute unit. They are in effect cost-benefit and cost-effectiveness analyses.

The adult acute unit

3.7 The fundamental issue is clarification of the functions of the adult acute unit, at the time of its completion and thereafter, within the overall range of accommodation needed. This Design Guide suggests broadly two main functions:

a. to care for and treat, residually, the residue of acutely ill adults who cannot be served within their sectors;
b. to undertake a liaison service with the rest of the general hospital, and maintain dialogue with other health service staff.

There is the related issue: whether or not other functions should be included. As examples:

a. will the unit care for acutely ill mothers with babies, in co-operation with the maternity service (see paragraphs 4.12 and 4.13);
b. given the physical geography, should the day activity component of the unit be enlarged and also function as part of, or be, the CMHC for the sector in which the general hospital is located;
c. should the unit also be a district support to sectors for other components of the mental health service, for example, substance abuse.
3.0 Planning issues

The team, in the “perceived best solutions”, assumed only the two main functions above, together with a capacity to care for mothers with babies.

3.8 The overall service strategy and the operational policies for the unit have space implications with issues for decision. One example is clinical psychology: will psychologists be sector-based and come to the unit either for generic purposes or to follow particular patients from their sectors? Alternatively, will there be a unit service with links with, or practice at, sectors? Similar issues arise for psychiatry and therapy services. Medical input is a substantial issue: are psychiatrists in the sectors to be allocated “beds” in the unit and follow their patients, or will there be a specific psychiatrist with a special interest for the unit, who links with the sectors? One example of the latter is known. Amongst the space implications of these issues are the volume and range of day activity spaces and the volume of administrative accommodation needed.

3.9 Other more specific issues include:
- where the ECT suite is to be located;
- out-patient provision. (Is it to be within the unit or the general hospital out-patients department or be located within sectors?);
- the location of the general management of the mental health service. (Is it to be associated with the adult acute unit, with a centralised general hospital management suite or be at one of the sector centres?).

3.10 The size of the unit is a nebulous issue, the usual general hospital measure, “beds”, not being appropriate as the term “bed”, in the mental health context, has increasingly controversial connotations. “Residential places” may be more appropriate. Furthermore, “beds” implies “bedspace” as the major space need for the patient. For mental illness, in comparison with physical illness, the bedspace is a small component of the total space needs, indoor and outdoor, of acutely mentally ill people. The functional size of a minimally viable adult unit, for a variety of reasons, including the staffing needs at night, was commended to the team as 20 residential places (but see also Health Building Note (HBN) 35, the workshop responses in Chapter 4, and Example 1 in Chapter 5, which discuss how this might be increased).

3.11 A current problem is the absence, in many places, of the range of accommodation required for a coherent, comprehensive service. Thus there is pressure to provide, inappropriately, at least a portion of this range, as part of the acute unit. This would increase its size and extend its functions towards a quasi-generic mental illness hospital. There may be only modest development of community-based sector services, hence the issue of use of resources to develop these during the acute unit project lead time and predict their effects. The danger is that a small acute unit may be developed before there is adequate staff for intensive domiciliary care.

3.12 The team considered that the basic functional components of an adult acute unit were:
- a. residential places, preferably with all single-bed rooms, together with living spaces, and a patient utility area;
- b. day activity spaces, including therapy spaces;
- c. a special room (see paragraph 4.11);
- d. unit administrative spaces and support spaces;
- e. the capacity to care for mothers and babies.

3.13 Issues to be considered relative to the siting of the unit in the hospital include:
- its relationship to the assessment and short term treatment unit for elderly people. There is a possible tension here. A close relationship enhances a coherent mental health service, and makes use of the ECT suite easy. On the other hand, the unit for the elderly mentally ill may also require to be related to the general hospital service to the elderly, and there may be good reasons for siting this in relation to other departments;
- which general hospital components should be located adjacent to the adult acute unit? In the examples in Appendix 1, adjacent general hospital components include operating department, geriatric unit, pathology department, and maternity department. Factors include on the one hand space restriction and diminution of the privacy of the adult unit, and on the other hand possible disturbance of others by the adult unit;
- the need for outdoor space.

Consultation

3.14 Consultation with other relevant agencies and with the “customers” should be undertaken to determine the philosophy of care and ensure the development of a coherent service. For customers the issues are: “who?” (patients/ex-patients/local branches of patient organisations); “how?” (project team membership/consultation); “when?” (from the beginning/at some later stage). The team, for instance, considered patients’ views, as reported in McIntyre et al. (1989), when examining possible solutions.
Conclusion

3.15 Consideration of these issues will inform the project/design brief for an adult acute unit, which will incorporate some implicit operational policies. As stressed in the introduction to this Design Guide, sketches of possible designs should be part of the project development process, as should operational policies which are as explicit as possible, so the space implications can be explored. The architect should become a member of the project team as early as possible, and detailed design work delayed as long as feasible for two reasons:

a. once started it is difficult and expensive to make amendments;

b. the development of mental health services during the lead time is likely to change, perhaps substantially, the functional needs and content of the unit.
4.0 Development

4.1 Chapters 4 and 5 draw together the results of the team’s work and consultations about the functional content, and implications for the design of an adult acute unit in the light of policy shifts and service developments since Health Building Note (HBN) 35 (1988) was issued. They seek to make explicit issues and features often taken for granted.

General

4.2 The most general and quite fundamental development has been from the concept of a Department of Psychiatry in a general hospital contained in the 1973 edition of HBN 35 to the current concept of the adult acute unit supporting a community-based service. HBN 35 (1988) - ‘Accommodation for people with acute mental illness’ was indeterminate, remaining influenced by the earlier concept though also affected by the findings of the Worcester Development Project Evaluation (Mental Health Buildings Evaluation Pamphlet No. 3, DHSS, 1982). Within the developing concept of the adult acute unit, specific issues such as the nature of therapeutic activity, the “special room” and its use, and mothers with babies, are examined below.

4.3 A workshop was held with Department of Health policy colleagues and in summary the conclusions were that:

a. there should usually be a general hospital location for the adult acute unit;

b. adequate therapeutic space both within the accommodation itself and outdoors was essential;

c. accommodation for at least 20 in-patients should be provided;

d. single-bed rooms should be provided;

e. containment within the unit was not required. The overall unit perimeter should be the containment;

f. there had been changes in therapeutic approaches. Primary nursing was confirmed as appropriate, together with a shift from “traditional” occupational therapy and physiotherapy to the restoration of social functioning;

g. normally there would be no day-attenders - day patients would be cared for and treated in community mental health centres and day hospitals at sector level;

h. despite its likely infrequent, or intermittent, use, there was need to provide accommodation for mothers with babies;

j. neither an OPD suite, nor an ECT suite should be provided. Out-patient clinics should be conducted either in the sectors or in the general hospital out-patients department. The ECT suite provided in the Nucleus unit for elderly people with mental Illness should be utilised for adults. It should be noted that this was an “on balance” conclusion about the location of the district’s ECT suite;

k. a “special room” should be retained, but one such room was sufficient;

m. most admissions would be “unplanned” including dealing with “crises” or because of an “incident”, that is, not from a waiting list, though some would be arranged over a timespan.

4.4 These conclusions were used by the team as guidelines for further development, replacing in part the guidance in HBN 35. They were used to develop sketches for another workshop with representatives from the National Health Service. The main conclusions of this workshop, in addition to confirming in general the conclusions of the workshop at the Department of Health, were that:

a. there was need to ensure that all planning and building guidance (including, if produced, a Nucleus data pack), contained both a clear policy for the use of the adult acute unit, and clear statements about the context (that is, the mental health service) in which its use was envisaged;

b. in a well-developed service the adult acute unit would not be the focus of the service. The focus would be in the community (sector and primary care level). Consultants’ offices would not be located in the unit, but at the sector bases;

c. the adult acute unit would provide for care and treatment which was not available or practicable in a locality, and would thus be a highly staffed unit;

d. despite a limited need, mothers with babies should be cared for within the locality. Developing a service with a larger catchment area was not appropriate;

e. “conventional”/“traditional” occupational therapy and physiotherapy, when needed by particular patients, should be provided in the general hospital rehabilitation department;

f. meeting the important patient needs for security, privacy, peace and safety, were prerequisites for effective care and treatment;

g. single-bed rooms should be provided to ensure “personal space”, where individual treatment could take place. Abuse of single-bed rooms was possible in
that some patients might seek to withdraw into their rooms when this was inappropriate, and this militated against effective treatment, which would need to be managed;

h. catering should provide a bulk food supply, not a plated meal service. Meals have therapeutic and socialising functions, being part of care and treatment plans, which should not be compromised by the general hospital catering policy;

j. in general the patient profile was likely to be 40% men (of average age 45 years) and 60% women (of average age 50 years). The age range would, however, be 16 to 65 years. Most would be in an acute stage of a major psychosis, and would remain in the unit, on average, about 4 weeks;

k. the general hospital location should be retained to facilitate dialogue between mental health workers and other health service colleagues in the hospital.

In contrast to the Department of Health workshop, it was felt that the ECT suite should be in the adult acute unit.

4.5 A further general issue became explicit: how the adult it and its activities might impinge on the general hospital, and vice versa. Aspects of this issue include:

- the more extensive need for, and use of, space;
- the need for outdoor space;
- the differences in ethos between services to people with acute mental illness and people with acute physical illness.

Thus, as part of a general hospital development, locational, service and design issues include:

- relationships with other parts of the general hospital:
  (i) what departments/wards of the hospital might most suitably be adjacent to the adult acute unit, bearing in mind possible sound disturbance from the unit;
  (ii) the use of outdoor spaces, including both noise and the overlooking of these spaces by other departments in an adjacent template or on an upper floor, with loss of privacy;

- functional relationships with the general hospital:
  (i) dialogue between staff of the adult acute unit and that of the hospital;
  (ii) cross-consultation - liaison psychiatry on the one hand and about acutely mentally ill people with physical illness on the other;
  (iii) use of the rehabilitation department as required;
  (iv) co-ordination with the maternity department when needed for mothers admitted with babies;
- access to the adult unit, especially for day attenders if the service includes these;

- how Nucleus templates might be linked if more than one is allocated to mental health services.

4.6 Further discussions with colleagues from both the Department of Health and the National Health Service indicated:

a. a continuing need for a “central assessment” unit on the general hospital site as a complement to community-based services;

b. that the need for in-patient places for adults with acute mental illness continued to decrease;

c. that these decreasing numbers of people who required admission were acutely ill and highly dependent.

Though clear “building guidance” was needed, a standard solution (a Nucleus data pack) even with a range of options, would be too restrictive in the light of the range of service patterns being developed within the knowledge or remit of the colleagues consulted.

4.7 Hence the adult acute unit, as envisaged, would be small, with high per capita capital and revenue costs, justified because of its role as support to the community-based services provided for most adults with acute mental illness. In this context, one sector within a district was noted as needing four acute beds for a population of 30,000; this is comparable with the Dean and Gadd report (see paragraph 2.5 above).

Some specific issues

Bedrooms

4.8 There was considerable discussion about bedrooms. Policy input indicated that as far as possible single-bed rooms should be provided, any exception containing not more than two beds. This was supported by discussion with the service, as well as information about recent developments, and reinforced by McIntyre et al. (1989) who noted that:

“...the more disturbed a patient is, the less he tolerates other patients.”

The people for whom this unit is intended are anticipated to be the most acutely ill and disturbed. There is considerable discussion of this issue, from another perspective, in ‘Building for Mental Health’, MARU (1991).

4.9 The team decided to develop the unit on the basis of single-bed rooms and test the feasibility of en-suite toilet facilities, as these would have the added advantages of:

a. facilitating care and treatment of the range of acute conditions expected;

b. providing more complete privacy and dignity;

c. enabling the maximum flexibility in use of the in-patient places for a mixed-sex unit.
4.10 To meet the higher incidence of physical illness associated with mental illness, one bedroom in ten was planned with a King's Fund bed to facilitate care, though it was indicated during consultations that major physical illness would be managed in an appropriate ward of the general hospital with support from the adult acute mental illness unit.

The “special” room (seclusion)

4.11 Provision of a “special room” for seclusion, “time-out” or other type of isolation and containment was indicated as needed, for the reasons which have been summarised by Morrison (1990), despite the problems and ambiguities in its use which both he and Topping-Morris (1992) describe. These reasons are:

a. to contain a potentially violent and dangerous situation;

b. to minimise the risk of injury to members of the ward community;

c. to prevent accidental injuries occurring to the confused patient;

d. to minimise environmental stimulation for the excited patient;

e. to isolate a patient to avoid negative interaction with others;

f. to be a quiet place of retreat.

The provision of single-bed rooms appears to satisfy some if not all of these needs for a “special room”. Following consultation, one was retained by the team.

Mothers with babies

4.12 The issue of mothers with babies was discussed during 1991 with Department of Health policy interests who, in addition to agreeing with the local approach, indicated that:

a. it was essential that there were close links with the maternity department of the general hospital, which would provide midwife, obstetric and neonatal care;

b. there would probably be intermittent use of the facility, as about one mother in 500 develops a post-partum psychosis, with, nationally, between 500 and 1,000 mothers requiring admission to an adult acute unit for 6 to 12 weeks. In addition, about 10 to 15% of new mothers develop a clinical depression and some of them may require admission for 4 to 6 weeks.

Based on the above, a catchment population with about 3,000 births per year could expect up to six mothers who develop a psychosis and up to 450 mothers who suffer some clinical depression (see also Thompson (1990)).

4.13 Intermittent access to about two appropriately designed places in an adult acute unit seems likely to be needed, though it now appears (late 1992) that the numbers are getting too small for an acute unit forming part of a community-based mental health service to be able, realistically, to provide the necessary expertise. The examples in Chapter 5 allow facilities to be included as required.

Therapeutic activity

4.14 Discussion with remedial therapy colleagues on the nature of therapeutic activity in an adult acute unit indicated a shift from more “traditional” occupational therapy and physiotherapy to the restoration of social functioning and physical health. This approach is inherent in the development of an individual care and treatment plan for each patient using, in addition, primary nursing. The nature of therapeutic activity to be provided in a particular unit needs to be determined by a clear, explicit decision.
a. Aerial view of St Mary’s Hospital, Isle of Wight

The mental illness unit is the more domestic building at the top left hand corner of the photograph. It was decided to separate the unit from the main building to create a more suitable environment for mentally ill people.
These photographs of general hospitals show the variety and individuality that can be achieved when using the Nucleus briefing and design system. It can be seen that the system produces hospitals with a welcoming and reassuring atmosphere for patient care. The question is—would the system provide a suitable environment for adults with acute mental illness?
5.0 Design

5.1 The team’s sketch designs in this chapter are some of those which were used and developed in the attempts by the team to produce a Nucleus data pack. Each has a commentary and notes which attempt to answer a paraphrase of Jones’s (1988) question:

“What does the building say to, and do for, the user?”

Though much is explicit, undoubtedly there will be much which will be left implicit. One constant in all the sketches is the intention that the unit is “domestic”, not “clinical”. The other constant, crystallised in the building design and frequently commented upon, is the service policy, which is the context for the unit.

5.2 Users of this Design Guide should consider the following questions when examining the sketches, and use them as springboards for debate about their own needs:

- “How would such a unit work in the mental health services we are developing?”
- “What are the implications of such a unit for the service we are developing?”

The conclusions reached will be important factors in decisions about providing appropriate accommodation for their service.

5.3 Three preliminaries:

a. the team’s sketches (Example 1) were developed using the experience gained when producing the Nucleus data pack – ‘Assessment and short term treatment unit for elderly people with mental illness’;

b. the Nucleus template was used by the team, hence, in principle, the sketch designs could be developed for actual construction. However, this is not the issue. **The issue is whether, and how, each meets an intended service need**;

c. Example 3 is in complete contrast, being a non-Nucleus solution. It is located with primary health care facilities, and reflects a markedly different form of service.

General

5.4 The issue of intended service need was, for the team, the major problem when seeking to develop a Nucleus data pack. By definition and intention, a data pack is a “standard” design solution for a hospital department or ward and rests on the assumption, confirmed by consultation, that there is general agreement:

a. on the nature and form of the service to be provided;

b. that a design solution within a Nucleus template (see Appendix 2 for definition of a Nucleus template) can accommodate efficient delivery of that service.

For most departments and wards these requirements are met by the Nucleus data packs. Furthermore, the hospital services being delivered are discrete, although they may be connected with each other (for example, theatres and surgical wards with the out-patients department, for referral for surgery and follow-up afterwards).

5.5 However, mental health services are fundamentally different, in that the adult acute unit (hospital accommodation) is not discrete, it is a component of the mental health service (see Figure 1). When developing the unit for elderly people described in the Nucleus data pack, sufficient general agreement was found for a standard design solution (with sizing options) to be prepared and issued, but there was no such general agreement for a standard design solution for the adult acute unit. The precise nature and functions of the adult acute unit in a particular locality depend upon the overall mental health service being developed.

5.6 One other principle of Nucleus development is relevant. Nucleus is concerned with making intensive use of mainly highly engineered and expensive space to deliver services to physically dependent patients who usually remain for only a few days in a general hospital. In contrast, an acutely mentally ill person requires much more space. Such a person is highly dependent, but in a different sense from the highly dependent person in a general ward. Whilst in both cases a high level of staff support is needed, the physically ill person is constrained (in space terms) by his acute illness, whereas the acutely mentally ill person is usually ambulant and mobile, with space restriction being a disadvantage. It is also worth noting that Health Building Note (HBN) 35 is about accommodation for both adults and the elderly, but what constitutes “acute” differs between adults (in the main acute phases of major psychoses) and the elderly (mainly disturbances associated with organic processes of dementia).

5.7 Furthermore, “short term” care and treatment means on average up to about four weeks, not a few days. One consequence of this length of stay is the need for usable outdoor space—the extensive use of space goes beyond the confines of the building. It is detrimental to confine within a building for this length of time people who are in the main physically able. Furthermore, such outdoor space is needed for therapeutic purposes (for example, gardening is an accepted therapy).

5.8 Space is limited, and two Nucleus templates are considered as probably the maximum allocation to mental
illness in a Nucleus general hospital development. A unit with one or two templates is more likely to be selected for a place in a hospital development control plan, particularly as it requires a ground floor, end location to ensure usable outdoor space. Such a size recognises other service needs and limited resources, and its exclusion cannot be justified on the grounds of being a disproportionate demand. Furthermore, such a size is in step with mental health service developments, and the reducing volume of need for hospital accommodation already discussed (see also Figure 1).

5.9 One service implication of a two template development should be particularly noted if both are to be used for adults, not one for adults and one for the elderly. As a result of its size, it could become the focus of, and base for, the locality mental health service. These functions appear to run counter to the notion of community-based mental health services. Decisions about such roles for the adult acute unit need to be taken deliberately and explicitly by a project team. They should not be included implicitly.

5.10 These points and distinctions are laboured in part because of the “taken for granted” issue noted in Chapter 1, and in part because of the important service delivery and design issues which flow from them.
Figure 2  "Perceived best solution"
Adult acute unit with two 10-place wards
Example 1: Perceived best solutions

5.11 The sketch designs in Figures 2 and 3 (with 3's variant in Figure 4) are the team’s “perceived best solutions” for a Nucleus data pack. They have moved significantly from HBN 35 (1988), and reflect the policy shifts since then, in response to service developments resulting from implementation of the policy of a community-based mental health service (see Chapters 2 to 4). The capital costs of schemes using these sketches would markedly exceed the cost allowances promulgated with HBN 35 based on the schedules of accommodation it contains (but see below). How philosophy of care influences design can be seen by comparing Figure 2 with Figure 3 as well as comparing these with Figure 5.

5.12 Figure 2 is for a 20-place adult acute unit, wholly for in-patients, which uses an expanded template which is both longer than the standard template and has an extended shoulder on the left-hand side, with an overall area of 1150 sq.m. approximately. The variety of spaces provides a therapeutic environment and assists the cost effective use of this component of a comprehensive mental health service. The main features are:

- a. the unit is located at the end of the hospital street. The entrance is from the hospital street via a small waiting lobby, related to therapy spaces (an activity room, and a group therapy/quiet room) as well as the staff and clerical office;
- b. all patients are accommodated in single rooms with en-suite toilet facilities. Two of the rooms connect (top right shoulder) as mother and baby accommodation, with the second room available as a nursery, or for use as needed, by the father;
- c. a special room is provided above the top left-hand shoulder;
- d. the living/dining spaces are at the far end of the template from the entrance, with quiet rooms and consulting/interview rooms, and the activities for daily living (ADL) kitchen, some distance from the staff off ice (see (h) below);
- e. there are several small sitting areas (described as “forum spaces” in HBN 35) distributed across the shoulders of the template;
- f. staff and patient utility rooms are in a central position, adjacent to the staff bases;
- g. there are two consulting/interview rooms within the unit. Near the entrance there is a consulting/examination room which is also available for admission purposes;
- h. the staff areas located near the entrance include, in addition to the staff and clerical off ices, another off ice and a staff/seminar room;
- j. linkage with an adjacent template is assumed on the right-hand side, as is a single storey specification to include top lighting.

5.13 Service delivery implications include:

- the overall size (20 residential places) is larger than that suggested as optimal for acutely ill people as a single ward and the expectation is that the unit would function as two 10-place components (“wards”);
- the more “formal” or “traditional” physiotherapy and occupational therapy activities are less evident, the emphasis being on restoration of social functioning;
- the spatial needs of individualised care and treatment are met by provision of the range of small spaces distributed throughout the unit;
- separation of the activity/OT space and group therapy/quiet room from the other day spaces embodies the notion of a patient or patients “going somewhere else for something specific”;
- though the overall perimeter, including the outdoor spaces, is the boundary, there is some possibility of operational compartmentation, with increased containment more feasible on the left, which has more informal sitting (forum) spaces;
- there is no notion of progression through the unit. Its overall function is to support a community-based mental health service.

5.14 Those admitted will be the most acutely ill and dependent people, and the unit will be highly staffed
Figure 3  "Perceived best solution"
Adult acute unit with one 20-place ward
The design lends itself to what McIntyre et al. (1989) report as the most helpful from the patient’s view by providing:

a. ample small spaces for patients to be with visitors in (relative) privacy whilst in public spaces, in addition to their rooms;

b. opportunities for talking with a member of staff, regarded as the most helpful therapeutic item. Again, the provision of small public spaces distributed around the unit allows this to occur spontaneously in relative privacy, as well as more “formally” in the patient’s room, or in a consulting/interview room;

c. several levels of separation. As already noted, the more disturbed a patient is, the less they tolerate others.

5.15 Figure 3, the second “perceived best solution”, is a variation of Figure 2 in response to comments. It retains 20 places, in single-bed rooms with en-suite toilet facilities and in an expanded template, the main features being:

a. the bedrooms and the “special room” are brought together at the end of the template. All rooms have sanitary facilities en-suite;

b. the small sitting (forum) spaces have been retained;

c. though there is no specified mother-and-baby accommodation it is feasible to connect rooms 3 and 4 for this purpose; or enclose the sitting space between rooms 13 and 14 and, by using this space, create a suite for this purpose, though the number of forum spaces is reduced;

d. the day spaces have been brought together as a discrete component of the unit at its entrance, and designed as a smaller number of larger spaces.

5.16 The implications for service delivery are somewhat different from those in paragraph 5.13 and include:

- clear separation of day activity spaces and relocation of single-bed rooms, which makes management easier;

- larger day activity spaces, implying a greater emphasis on group activities and thus a different philosophy of care;

- day spaces which can be closed down in the evening and at night. Conversely, bedroom spaces can be closed down by day, which would limit the use of single-bed rooms and the forum spaces for therapeutic activity;

- the arrangement of bedrooms, 12 rooms on one side and 8 on the other, is such that separation into two 10-room components is less feasible, and the staff base is less convenient. Without separation the unit is larger than commended as optimal for a single “ward” (see paragraph 3.10).
Figure 4  "Perceived best solution"
Adult acute unit with one 15-place ward
5.17 Figure 4 is a variation of Figure 3 providing for 15 in-patients, to meet the size problem. It provides a larger ADL kitchen, and uses a standard Nucleus template. By using one or two of the templates illustrated in Figures 2, 3 and 4, designs could be developed which would provide 15, 20, 30, 35 and 40-place units.

5.18 Two more general comments about these solutions:

a. no ECT suite is included. The district ECT suite is incorporated in the unit for assessment and short-term treatment of elderly people with mental illness (Example 2), which government policy requires to be located at a general hospital. ECT is thus readily available when needed for patients in an adult acute unit located at a general hospital. If a particular project for an adult acute unit is to include an ECT suite, it will need to be designed so that the spaces can be used flexibly at other times. See ‘Building for mental health: Stick to your principles’, MARU (1991), pages 25 and 26, where this design issue is explored;

b. the designs facilitate movement of patients, should this be required. A two-template unit clearly provides more scope for this, and a system of “patient progressive care” could emerge. Whether such a system is appropriate for people with acute mental illness appears to be untested, and in some ways it runs counter to individualised care. Furthermore, in a larger unit, categories of care may emerge which are not appropriate for an acute unit in a general hospital.

5.19 However, it was concluded that these “perceived best solutions”, even with a range of options, were too restrictive for the range of service policies being developed.
Figure 5  Assessment and short term treatment unit for elderly people with mental illness
Example 2: Unit for elderly people

5.20  Figure 5 shows the single template, minimum-viable unit in the Nucleus data pack - 'Assessment and short term treatment unit for elderly people with mental illness', 1989, Department of Health. It is examined here for its feasibility as an adult acute unit. One consideration of the team was the possibility that this pack could also be used for the adult acute unit. This proved not to be the case for reasons including the following:

- the functions of the unit for the elderly differed substantially from those which emerged for adults, in its functional content and its place in the context of the district’s service;
- the assessment unit for elderly people was designed to cater for people with physical disabilities associated with age in addition to the mental illness, a less mobile group. Space could be more intensively used for elderly people than was feasible for adults in the acute phases of major psychoses;
- there was not the same level of general agreement about the nature and functions of the adult acute unit, either in the context of a comprehensive mental health service, or as part of a general hospital development, especially a Nucleus one.

5.21  The detailed service policy on which the design and layout were developed is contained in the “Planning principles and design description” to the data pack, the main features being:

a. the primary purpose of the unit is assessment of those who cannot be assessed adequately on a domiciliary basis, and require longer more continuous observation and assessment to reach decisions about rehabilitation and future care needs, together with short-term treatment if this need emerges;

b. there is general agreement that although mental health services to elderly people with mental illness are community-based, the assessment and short-term treatment unit has a function as the focal point of these services;

c. the majority of elderly mentally ill people will be suffering from organic dementing illnesses (principally Alzheimer’s disease). A substantial proportion of the remainder, with functional illnesses, will be suffering from depressive conditions and be admitted for a course of ECT. In addition, many will have physical disabilities associated with age, and the scale of provision of assisted bathrooms and toilets reflects this.

These factors account for the functional content of the accommodation: 10 in-patient places, 20 day hospital places, out-patent and administration suites, and the ECT suite.

5.22  There is marked contrast when a unit for adults with acute mental illness is considered. From the team’s work:

a. the adult acute unit emerges as a support to community-based services most usually organised in sectors;

b. people coming to it are in the acute phases of a range of major mental illnesses, mainly psychoses, who cannot be cared for or treated in any other way;

c. there is not the same general agreement about the nature and form the adult acute unit should take, but there is general agreement that the adult acute unit would be primarily for in-patients, with few, if any, day attenders.
Figure 6 – Ground Floor: Example 3
A community solution
This community mental health centre is currently being planned and the Figure has been used ahead of finalisation. It is included by kind permission of Paul Rooney, Assistant Unit General Manager - Patient Care Services, East Birmingham Health Authority, and of MAAP, Architects for the development.
Example 3: A community solution

5.23 East Birmingham is developing sector-based services (see Appendix 1). These include residential/in-patient accommodation at community mental health centres (CMHCs) for the treatment of acutely ill adults within their sectors, firmly linked to primary and community health care services. The design in Figure 6 is for a combined health centre which includes a CMHC serving one sector of a three sector mental health service.

5.24 The overall accommodation is planned to meet the mental and community health care needs of a sector of the population and the primary care needs of part of the sector. Components include the CMHC and accommodation for primary and community health care teams and three general practitioners. More than one third of the accommodation is shared.

5.25 The dedicated CMHC accommodation is on two floors, and comprises:

a. on the ground floor, a 30-place day activity centre for day attenders and residents/in-patients with activity rooms, sitting, quiet and day/dining rooms;

b. on the first floor, residential accommodation for 14 acutely ill people in single rooms (four with en-suite bathroom), together with small sitting, multi-purpose, treatment and interview rooms for people too ill to use the day activity centre;

c. on each floor, staff base and supporting ancillary rooms;

d. a private garden taking up part of the external space.

In addition, the CMHC “acute unit” shares some treatment and staff spaces on both floors with the primary and community health care services, in particular:

e. on the ground floor, out-patient consultation and treatment areas associated with the general practitioner component on a programmed basis;

f. on the ground floor, family/child treatment and activity space;

g. on the first floor, the sector service administrative base;

h. on the ground floor, a substantial communal area, including the main entrance. A small separate entrance to the CMHC is provided for use mainly when the main reception is closed.

There is also a supporting service at the general hospital as an addition to another sector’s CMHC which is located there (see Appendix 1). The district ECT facility is located in the unit for elderly people, also at the general hospital.

5.26 In addition to the comments in Appendix 1 about East Birmingham, it may be noted that:

a. the close links with primary and community care provide a continuum of care for acutely ill people from a single site;

b. there is an ambivalence about the CMHC first floor design. On the one hand it can be seen as an institutional corridor, patients’ rooms leading off, with a staff base at one end and a sitting room at the other. Alternatively, it can be seen as a typical hotel corridor, with each room only a base for its temporary occupant. How the accommodation functions, and is perceived, depends on the philosophy of care and how service is delivered. It may be contrasted with the concept diagram for the residential accommodation to be located on the hospital site (see Figure 15);

c. it seems likely that much of the operational policy for the overall accommodation and the CMHC is implicit, especially in the area of detailed interaction between primary and mental health services.

5.27 The health authority notes (August 1992) that funding is almost completely agreed. The funding is unconventional, with contributions from the regional and district health authorities, the family health services authority and the Inner City Partnership. Construction is planned to start in December 1992 and be completed by January 1994.

5.28 When contrasted with the other examples in this Chapter and Appendix 1, this example shows the range of solutions which emerge from the variety in philosophies of care noted and discussed in Chapter 2.
Example 4: Strict Nucleus

5.29 The designs in Figures 7 and 8 were produced by a consultant experienced in Nucleus general hospital design. They are included to show the effects of “taken for granted” knowledge noted in Chapter 1 and discussed in Chapter 6. They illustrate paragraph 5.6, as they seek intensive use of space, and “efficient”, simplified planning to Nucleus hospital assumptions. The consultant was asked to consider Figures 2 and 3, but in a strict Nucleus framework, and Figure 7 was the result. Comparison of the sketches shows the extent of the differences, which include:

- the five day spaces and the sitting spaces have been replaced by two large spaces, “day/dining” and a (divisible) “group therapy/OT activity” space;

- there is limited scope for some project design in the day/dining space, but the service delivery implication is much more that of dealing with the patients as a single group;

- the design, and options (not illustrated), contain the concept of intensive use of space in a general hospital context, noted above (paragraph 5.6) as a problem when designing for adults with acute mental illness;

- Figure 7 achieves “space savings” of some 13% when compared with Figures 2 and 3.

5.30 Figure 8 adds, in a half-template, another 10 beds to the acute unit design in Figure 7. These additional beds are juxtaposed with a half-template allocated to a standard 28 bed medical or surgical adult acute ward. The single large day/dining/lounge could be further subdivided but the underlying service principles of intensive use remain. Options (not illustrated) were prepared which increase intensity of use still further and showed how more patients could be accommodated.
Figure 7  “Strict Nucleus,” interpretation of Figure 4
Adult acute unit with two 10-place wards
Figure 8: "Strict Nucleus" interpretation and development of Figure 4
Adult acute unit with three 10-place wards
Cost implications

5.31 As already described at length, the continued rapid service development since HBN 35 (1988) was published has markedly changed the functions of the adult acute unit and affected the space required, hence its cost. Space needs are affected in two ways.

a. the number of places needed is substantially reduced as community-based services develop;

b. the space needed per place for effective service delivery has increased.

Table 2 shows these effects by comparing “the places” in Examples 1, 3 and 4 above with the range of options derived from Health Building Note (HBN) 35 (1988) for a 20-bed unit.

5.32 It should be borne in mind that the policy embodied in HBN 35 is that the minimum size of a unit is two wards and a day hospital. The minimum size of a ward is 10 beds from a ward range of 10, 15, 20 or 25 beds. The smallest unit, therefore, should provide 20 beds, that is, two wards of 10 beds each.

5.33 Comparisons should be made with care. The major problem is how far like can be compared with like. The accommodation in HBN 35 (approximating to a hospital-based service), for example, Figure 7, is distinct from the accommodation described in this Design Guide (supporting a community-based service), Figures 2 and 3. Furthermore, the services proposed are distinct. However, it is expected that the “strict Nucleus” (Figure 7) solution could be contained within HBN 35 cost allowances.

5.34 The two “perceived best solutions” (Figures 2 and 3) are for small units for the most acutely ill and highly dependent people: each will need to be highly staffed and will have high revenue costs. As Table 2 indicates, the capital cost, on a per capita basis, is also high. It is anticipated that Figures 2 and 3 would result in a design solution 15% to 20% more expensive than one conforming to HBN 35 guidance. The team considered that these additional costs would be justified as a cost-effective use of resources when the unit is part of a coherent community-based mental health service (see also paragraphs 3.6 and 4.7).

Table 2

<table>
<thead>
<tr>
<th>Approximate area sq.m.</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Example 1</td>
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<tr>
<td>• Figure 2</td>
<td>1150</td>
</tr>
<tr>
<td>• Figure 3</td>
<td>1144</td>
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<tr>
<td>Example 3</td>
<td></td>
</tr>
<tr>
<td>• Figure 6</td>
<td>1103</td>
</tr>
<tr>
<td>(i) CMHC component</td>
<td>1033</td>
</tr>
<tr>
<td>(ii) Spaces shared in other components (total area)</td>
<td>630</td>
</tr>
<tr>
<td>Example 4</td>
<td></td>
</tr>
<tr>
<td>• Figure 7</td>
<td>1016</td>
</tr>
<tr>
<td>HBN 35 - Option A</td>
<td>1021</td>
</tr>
<tr>
<td>HBN 35 - Option B</td>
<td>981</td>
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<tr>
<td>HBN 35 - Option C</td>
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</tr>
<tr>
<td>HBN 35 - Option E</td>
<td>826</td>
</tr>
</tbody>
</table>

(1) HBN 35, paragraph 3.10, defines the two types of ward. “A ‘bed-annex ward’, which is functionally integrated with a day hospital. In this case, the ward functions primarily as a bed annexe to its associated day hospital. A ‘self-contained ward’, where all or most of the patients do not use the day hospital facility... Hence, living, dining, recreation, and therapy areas will need to be incorporated into the ward design.”
Examples from the field

5.36 Appendix 1 contains illustrations (Figures 9 to 15) of accommodation being planned, constructed, or recently completed by particular health authorities in England. Each sketch is accompanied by brief notes and comments together with a “1992 district update” notes from the authority. We are most grateful to these health authorities for agreeing to this use of their plans. It is stressed that the comments are made in the context of the team’s work, with hindsight, and from a detached perspective.

5.37 Hemel Hempstead, Scarborough, Bromley, Redhill and Northallerton (Figures 9 to 13) are Nucleus hospital designs and it is important to note:

a. they were planned in the early to mid 1980s, with, at best, access to early drafts of the current HBN 35, but were influenced more by its predecessor, issued in 1973. Hence there are pulls to both the “DGH department of psychiatry” concept and to the intensity of use of space associated with Nucleus;

b. that the rapidity of development of community-based services, with an adult acute unit as a supporting component, is now clear, especially from a detached perspective. For a particular project team at that time, divining the speed of such development would have been, colloquially, “crystal balling”, especially in the context of the wide range of pressures (service need, professional, financial, time) under which they worked.

Aspects of these issues are commented upon in the notes which accompany the sketches.

5.38 Canterbury and Thanet and East Birmingham (Figures 14 and 15) are related as their notes indicate. They are non-Nucleus and similar in approach to the “perceived best solutions” above, being designs both to purpose and to meet individual need within a mental illness service context. Their purposes differ somewhat though the attempts to design for individual need are similar. They also describe a somewhat different approach to national guidance. One district comments:

“The statement . . . in HBN 35 that ‘it is essential that health authorities make a careful, detailed assessment of need and . . . decide upon the philosophy of care’ is the most important piece of advice in the HBN, and probably the most ignored . . . It is only after such assessment that guidance may be safely consulted as a genuine source of information and ideas . . . rather than a set of instructions”

whilst the other district notes:

“(National) guidance has a habit of becoming a straitjacket to the field . . . . Once guidance is seen as a resource there is a good chance of achieving local objectives within the spirit and purpose suggested by the centre.”

5.39 The main implication of these examples is the major effect, on both the size of an adult acute unit and on its design, of the rapid changes in service policy with the development of more coherent, community-based services. As can be seen from the notes in Appendix 1:

a. the Hemel Hempstead unit, now complete, is not to be used for mental health at all, but for general medicine and surgery. A new mental health strategy is being developed with a pattern of service very different from the functional components of the Nucleus scheme;

b. the Scarborough unit is to be constructed in the coming year or two, but service development has caused debate about the need for 36 in-patient places and about the number of day places provided;

c. the Bromley unit is being redesigned, with substantial reduction in the number of adult acute beds. There is a positive decision to “design to Nucleus” within a general hospital framework;

d. the Redhill unit is now open, but the Intensive design has resulted in reduced flexibility in use, and it is considered that the space provided was too small, with consequent exclusions from the brief as well as dual use of rooms;

e. the Northallerton unit has opened and is felt suitable, with some reservations. There is over-provision of acute beds for the service needs of the locality, so much so that extra-contractual referrals are being admitted to the unit. The provision of day places in a hospital is now regarded as a backward step in the context of a community-based service.

In contrast, neither Canterbury and Thanet nor East Birmingham report design problems in the service development context, though one notes a problem with gaining approval for a “non-traditional” plan and design.
6. Summary/conclusion

6.1 Services to people with mental illness remain in a state of rapid and varied development, reinforced by the changes now being implemented in both the National Health Service generally and community care. In service development there is convergence on the main delivery of services to people with acute mental illness being community-based, by teams working from sector-based community mental health centres.

6.2 A range of types of accommodation is needed as components of the overall service. It appears that the distribution of this range of accommodation is along the lines of Figure 1, that is, decentralised (sector) facilities as opposed to more centralised ("catchment") facilities. However, the team’s work revealed that this issue is unresolved in some respects, as examples in Chapter 5 and Appendix 1 show. A comparative example and debate is contained in ‘Building for Mental Health’, 1991, MARU. It is one of the issues to be determined by explicit discussion when developing services.

6.3 The number of acute “beds” for adults, that is, the size of the adult acute unit needed, is a function of the philosophy of care envisaged and the service to be developed, though influenced by catchment size and demography. It is essential that project teams give explicit consideration to the service context in which their acute unit is to function, and the rate of service development likely during building lead time. There appears at present to be a general agreement that the adult acute unit should be at, or closely associated with, the general hospital.

6.4 Principles, development, design issues and design solutions for an adult acute unit have been discussed separately, with hindsight, in this Design Guide. They interact during any team’s work, when ideas and design sketches are modified by discussion and consultation. A persisting major problem is that in any team, each member brings distinct professional knowledge and service experience to the enterprise, and much of this remains implicit and “taken for granted”. Furthermore, the service delivery consequences and implications of a sketch design may not emerge clearly for consideration. Hence, important design requirements for service delivery are often not made explicit until a late stage of a project design and may then only be met partially, with difficulty and at considerable expense, if at all. Bearing all this in mind, a project team has to come to its “perceived best solution” within a finite, possibly quite short, time with the possibility that, given the rate of service development, the solution may be inappropriate when built.

6.5 There is general agreement on the need for accommodation to be “non-clinical” and domestic in appearance. This reflects Jones’s (1988) comments about what the building says or should say to the user, which may be:

“This is a hospital. Go away unless you are sick; and if you are, do as you are told”

or

“This is a friendly place - we will help you to help yourself.”

Within Nucleus constraints (see Example 1, Chapter 5) the team sought to achieve the latter. Whether these “perceived best solutions” succeed in this aim is a moot point, as is the related question of whether or not a Nucleus solution within a general hospital context can be sufficiently friendly for adults with acute mental illness. However, the approach is commended to users of this Design Guide, and it is also indicated by the ‘NHS Handbook’, 1991, National Association of Health Authorities and Trusts (NAHAT), which notes:

“. . . there is also an increasing recognition within mental health services that it is not only a matter of what is provided, but how it is provided and that future planning should be not only about what the services look like but about what they feel like . . . if those who use the services are listened to, there is much evidence available . . . it will be necessary for the participation of users and their representatives to be commonplace. . . .”
Appendix 1

Examples from the field

Hemel Hempstead
Scarborough
Bromley
Redhill
Northallerton
Canterbury and Thanet
East Birmingham
<table>
<thead>
<tr>
<th>Text reference</th>
<th>Hospital</th>
<th>NHS trust</th>
<th>Health authority</th>
<th>Locality</th>
</tr>
</thead>
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<tr>
<td>Hemel Hempstead (Figure 9)</td>
<td>Hemel Hempstead General Hospital</td>
<td>Dacorum and St Albans Community NHS Trust</td>
<td>North West Hertfordshire Health Authority</td>
<td>Hemel Hempstead</td>
</tr>
<tr>
<td>Scarborough (Figure 10)</td>
<td>District Psychiatric Centre Scarborough General Hospital</td>
<td>Scarborough and North East Yorkshire Healthcare NHS Trust</td>
<td>Scarborough Health Authority</td>
<td>Scarborough</td>
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<tr>
<td>Bromley (figure 11)</td>
<td>Department of Mental Health proposed Bromley District General Hospital</td>
<td>Ravensbourne Priority Health NHS Trust</td>
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<tr>
<td>Redhill (Figure 12)</td>
<td>Mental Health Unit East Surrey Hospital</td>
<td>East Surrey Hospital and Community Healthcare NHS Trust*</td>
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<tr>
<td>Northallerton (figure 13)</td>
<td>Mental Health Unit Friarage Hospital</td>
<td>Northallerton Health Services NHS Trust</td>
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<td>Northallerton</td>
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<tr>
<td>Canterbury and Thanet (Figure 14)</td>
<td>Thanet District General Hospital</td>
<td>Canterbury and Thanet Community Healthcare NHS Trust*</td>
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<td>East Birmingham (Figures 15 and 6)</td>
<td>Yardley Green Unit Jenkin Street Unit</td>
<td>Directly managed unit</td>
<td>East Birmingham Health Authority</td>
<td>Yardley Small Heath</td>
</tr>
</tbody>
</table>

* NHS trust status from April 1993
Hemel Hempstead

Notes

Overall philosophy

1. To provide a hospital service, integrated with community mental health services, to complement local authority services.

Functional content

2. This is defined as part of a psychiatric department for two sectors of a four-sector district, with:
   a. 40 in-patient places (2 x 20-place wards);
   b. 60-place day hospital;
   c. ECT suite;
   d. administration;
   e. community base.

This part of the psychiatric department uses two Nucleus templates. A unit for elderly people with mental illness uses a further two templates.

Comments

3. The district mental health service context is not clear from the operational policy. There is an implication that the department is related to two sectors, with community services assumed.

4. The in-patient places are specified for acutely mentally ill adults, with a concept of progressive care, from high dependency to low dependency. Half the patients on average are to use the day hospital, so each ward combines, functionally, a “bed-annex” component and a “self-contained” component, with no therapy areas for the latter.

5. The layout of the wards is suggestive of the acute (general) ward with an approximately equivalent density. This intensive use of space is more significant than in Bromley, as half is “self-contained”.

6. The day hospital, with 60 places, is 50% larger than the currently (1991) commended maximum size. Service is to be delivered to 20 of the less dependent acutely ill people from the wards, and 40 day attenders, using a two-team staff structure. This, with the community base, suggests the unit is the focus of the mental illness services to the district.

7. The forms of service being delivered by the day hospital are “traditional” in orientation (as indicated by the activity spaces), together with ADL functions. There is no obvious physiotherapy input, none being specified. One implication of this approach, bearing in mind the proportion of day patients, is that the day hospital will cater for medium/long-term, more chronically ill attenders as well as the acutely ill, thus increasing the hospital focus of the service.

8. This example, like others, when examined with hindsight, exemplifies issues discussed in this Design Guide. For example:
   a. intensive rather than extensive use of space;
   b. the effect of construction as part of a rolling programme for the development of a DGH, being part of the third phase, that is, development within a DGH context rather than a mental illness service context;
   c. as already noted, the district service context for the unit is not evident. Clearly there must exist a large “sub-text” about this, to enable such a development to have gone forward. It may be that this “sub-text” can be derived explicitly from other documents, but it is probable that much exists only in the minds of the project team;
   d. a “taken for granted” assumption about mental illness service development: that the philosophy of care will remain fairly static.

9. The last point restates the central problem the team had, which faces all project teams in the field. The team which prepared this project had to come to some “perceived best solution” within a finite, possibly quite short, time which may not be appropriate when the unit is constructed. It is relevant to note that in July 1991 correspondence it was commented that “many of the professionals concerned with the project had reservations on the appropriateness of this development for mental health service users”.

Hemel Hempstead location plan
1992 district update

10. The completed building is not to be used for mental health services.

11. A new joint mental health strategy is being developed and “the pattern of service which is emerging IS very different to the functional components of the Nucleus scheme”.

12. “... acute services will be provided away from the DGH site, in a community treatment unit.”
Scarborough

Notes

*Overall philosophy*

1. To be a secondary resource for the front line service provided by the geographical sectors.

*Functional content*

2. This is defined as a **district psychiatric centre** for a four-sector district with:
   a. 36 in-patient places;
   b. 40-place day hospital;
   c. ECT suite;
   d. administration.

*Comments*

3. This is an integrated unit in two respects, serving day attenders as well as residents, and both adults and the elderly. The former is the service pattern indicated in HBN 35, but the latter is not; separation of adults and elderly being described in the HBN and usually seen in service development. Their amalgamation may be a function of district size, implied by the scale of in-patient provision specified as 0.5 places/1,000 population, the high limit of the 1984 “norm”. Whether, as a result of community-based service development, so many places are needed for acutely ill people may merit further consideration.

4. Service delivery is envisaged not only by range, but also by sector, there being four In-patient teams corresponding to district community-based sectors with, also by implication, teams for the two sectors for the elderly. This approach is complicated by allocation of in-patient places to consultants on an ad hoc basis, with the implication of patient progression through the unit.

5. The centre is specified as a secondary resource for the district mental health services but the administration suite suggests it may be the focus of the services, as it contains offices for all consultants and their secretaries, as well as nursing officers, the service manager and secretarial support. The five interview rooms, shared with the day hospital, may reinforce this, and an out-patient clinic function might emerge, though this is not explicitly included. These pulls into the centre appear to run counter to its stated secondary function.

1992 *district update*

6. It is planned to construct the unit during the early to mid 1990s.

7. There have been changes in design detail (for example, observation windows, radio/alarm points modified).

8. Service development in the district “has caused some debate about the need now for 36 in-patient places - and the number of day places”.

9. There remains some concern about security arrangements with one linking corridor, but plans “have been constantly reviewed and updated ...”.

## Bromley

### Notes

**Overall philosophy**

1. To serve adults with acute mental illness within a District General Hospital, in a unit which can function “only if full facilities for the community element are in place.”

**Functional content**

2. This is defined as part of a **department of mental health** with:
   - a. 75 in-patient places (3 x 25-place wards);
   - b. 50-place day hospital;
   - c. ECT suite;
   - d. administration.

Two of the wards each contain a discrete 3-place intensive therapy suite for seclusion.

**Comments**

3. This is a large unit for adults. The department also includes a unit for 48 elderly in-patients.

4. The district service context for the unit is not evident. The focus of the overall service is not clear but such a large unit is likely to have a centripetal effect.

5. Eight consultants are specified, though how in-patient and day care (if any) places are distributed is not evident.

6. The “Nucleus issue” is exemplified in this sketch which, with the relatively intensive use of space, indicates a design to Nucleus hospital criteria rather than a design to provide a flexible role within a community-based mental health service.

**1992 district update**

7. Discussions on revised layouts are nearing conclusion for a **psychiatric unit** to include:
   - adult acute - 61 beds;
   - elderly acute - 19 beds;
   - elderly assessment - 19 beds;
   - day hospital - 50 places;
   - ECT suite;
   - administration centre (large)

The reduced adult acute beds (two wards of 20 beds each and one ward of 21 beds, with one ward to contain five special bedrooms) and the day hospital will be contained within two Nucleus templates.

8. Since 1988 there has been a “positive futures” programme, particularly to resettle residents from a large, old mental illness hospital, and by the end of 1992 over 20 projects will have been completed. Currently all acute psychiatric beds are provided within one hospital, and a comprehensive service will be developed by 1993.

9. There remains a positive decision by the district to design to Nucleus, within a general hospital framework, on the grounds that the advantages of the total concept outweigh potential disadvantages in individual departments. For mental illness, flexibility is to be within the range of services, the majority being in the community, not in the specific service planned within the DGH.
Appendix 1

Figure 12  Redhill –
Mental health unit
Redhill
Notes

Overall philosophy

1. To provide a service to people with acute mental illness from two sectors, who display behavioural disturbances which cannot be effectively managed within the locality but do not require admission to the “close supervision unit”.

Functional content

2. A component of a mental health unit serving two sectors, to support the community service, comprising a 20-place ward in part of a Nucleus template with access to facilities in the adjacent day hospital for elderly people. ECT is to be in the DGH out-patients department.

Comments

3. There are differences when the project brief, design and operational policy are compared, the most marked being:
   a. the project brief specifies 12 single-bed rooms, the design provides eight;
   b. the operational policy describes the use and control of the secure room for seclusion. None was indicated in the original design and project brief. However, the final design has included a seclusion room;
   c. a creche was included in the original design, but not provided. Each of the four single rooms off the corridor can be used for a mother with baby;
   d. a patients’ utility room is described in the “Planning principles and design description” (PPDD) but not provided. However, given the emphasis on shared spaces, the ADL laundry in the day hospital for the elderly may be intended for such use, though it is not so specified and its location IS not convenient.

These are quite substantial differences. However, the attempted provision of 60% of places in single-bed rooms (even though only 40% were provided in the design) reflects the rapid service developments already noted. HBN 35 was not able to specify such a proportion of single rooms in 1988.

4. The consequences of the location of some of the single-bed rooms appear complex. Four are placed, in pairs, at the far end of the two four-bed rooms located opposite the staff base. These paired single-bed rooms can be reached only by passing through the four-bed room. Their operational use, therefore, would appear to be distinguishable from the remaining four single-bed rooms on the corridor. A notion of progressive care suggests itself: from a single-bed room on the corridor (most disturbed), to a four-bed room, to a single-bed room associated with a four-bed room (prior to discharge). Furthermore, the arrangement appears to reduce flexibility in use - the six-bed components opposite the staff base must each be for single-sex use, with an implication of patient movement to meet contingent needs, given the short stay nature of the ward. This may militate against any therapeutic function the formation of small groups in the intimacy of a four-bed room may have.

5. The volume of therapy available IS undetermined. The ward has the characteristics of a self-contained ward with, however, no specified therapy spaces. The day hospital for the elderly and the physiotherapy department are specified as available on an individual patient basis as shared spaces. However, their operational policies specify them as being for day attenders primarily, though available on an agreed basis for both adult and elderly In-patients as well as day attenders. How many of each, at any particular time, is thus a matter of negotiation; competing priorities are likely to emerge.

1992 district update

6. The ECT accommodation IS now an Integral part of the adult acute provision, and IS not being provided from the general out-patients department.

7. It is now considered that the reduction in the proportion of single-bed rooms noted above has reduced flexibility, and can exclude people from admission.

8. Overall it is considered the space provided was too small, hence the exclusions from the original brief, and the dual use of rooms.
Figure 1.3 North Hallerturn
Department of psychiatry
Northallerton

Notes

*Overall philosophy*

1. To be the focus of the psychiatric services in a two-sector district, and be the centre from which services are delivered.

*Functional content*

2. The accommodation is part of a department of psychiatry which also contains accommodation for elderly people. The adult accommodation comprises:
   a. 40 in-patient places (2 x 20-bed wards);
   b. 40-place day hospital;
   c. ECT;
   d. out-patients suite;
   e. administration.

An expanded, modified Nucleus template is used.

*Comments*

3. This design is not for an adult acute unit but for a department of psychiatry, explicitly designed for a hospital-based mental health service to the district. Neither can the “adult acute” component strictly be said to be such, as:
   a. medium stay patients are envisaged;
   b. a proportion of in-patients is expected to require minimal nursing care and minimal supervision.

Intensive rather than extensive use of space is inherent in the design, reinforced by the indication in the planning principles document that circulation space can be saved in the wards.

4. Patient progression through the wards is indicated; from single-bed room to multi-bed room (as single-bed rooms are intended for the more disturbed) and, implicitly, between the wards, as three consultants share the patients in a ward, suggesting that each will have patients in both wards. There is also the possibility of a high dependency component in the first ward, as the “special room” is associated with the two-bed rooms containing two beds. The arrangement of a single-bed room associated with a multi-bed room in several places makes possible the formation of small groups of patients. The scale of provision of in-patient places is not specified, but the 40 places are for a two-sector (that is, small) district.

5. In the day hospital, therapeutic activities include the more “traditional” forms of occupational therapy as well as activities of daily living. Physiotherapy is not envisaged as including sophisticated assessment and treatment; when these are needed they will be provided by the DGH main service. Most day hospital places will be used by in-patients, though variable numbers of day patients are expected. There is very little day space in either ward - one small quiet room in each.

*1992 district update*

6. The new Department of Mental Health was opened in March 1992. The design is not felt to be ideal. Since it was first planned and the brief prepared, the service has developed and changed. The building is still considered suitable but the provision of a day hospital within an acute unit is in some ways felt to be a backward step from the community-oriented service which is being developed.

7. Some modifications to the original brief were requested during the planning and building stages, for example, change of use of some areas and addition of a disabled persons’ toilet in the reception area, but there are still some design problems which have only recently become apparent. Attempts to rectify them are being made even at this late stage.

8. The service has expanded, and the district is now divided into three sectors each with a consultant psychiatrist and community mental health team. Although there is over-provision of acute beds, it is envisaged that some will be used for medium-stay patients requiring longer-term rehabilitation; also, extra-contractual referrals are being accepted.

9. Problems are foreseen with the number of day places; the existing day hospital has an average attendance of 15 to 20 people per day, but the new day hospital is expected to accommodate the majority of in-patients, thereby leaving very few day places. Services in the community such as mental health resource centres are being developed because the rural nature of this area presents transport difficulties. There were plans to establish satellite day hospitals in various other centres of population but it is very difficult to obtain suitable buildings which could be adapted. The new unit will therefore provide a central focus for services in the district.
Photographs of the Mental Health Unit – Friarage Hospital, Northallerton.

Main entrance

External view towards main entrance

Main entrance reception
Living/dining area (with door to courtyard)

Living/dining area

Four-bed room
Figure 14: Canterbury and Thanet -
Short-stay ward (15-place), with day hospital
Canterbury and Thanet

Notes

Overall philosophy

1. To be a short-stay ward with a day hospital on a DGH site to serve one end of a bipolar district.

Functional content

2. This design was produced as one result of the MARU study, reported in ‘Building for mental health’ (1991). The accommodation is similar in design to East Birmingham and comprises:
   a. 15 in-patient places;
   b. day hospital with ECT;
   c. administration.

Comments

3. Though both the Canterbury and Thanet project team and the East Birmingham project team worked with MARU, their respective districts are quite different; Canterbury and Thanet is primarily rural, bipolar, and large in area, whereas East Birmingham is a wholly urban district of small area.

4. The most important implication is that two quite disparate districts reached similar conclusions and designs. Although they interacted with each other, with the MARU action research team and with the Department of Health team (which was the Steering Group for the MARU research), each district worked to meet its own needs and determine its own philosophy of care. Canterbury and Thanet comments:
   “The solutions arrived at . . . for acute and short-term treatment of mental illness are specific to the district: there is no suggestion that (they) are appropriate to other districts; rather each local set of circumstances is likely to generate a unique way of meeting needs . . .”.

5. There is an ambiguity in this comment. In the context of this Design Guide the service delivery solutions arrived at by this district are distinct from East Birmingham’s, but both end with similar accommodation, that is, there is a convergence, which is related to the “perceived best solutions” (Example 1 in Chapter 5).

1992 district update

6. The other adult short-stay unit for the district is planned to have 10 residential places (two sets of five), with a 25-place day facility, which will include ECT. On the same site there are to be a 10-place medium-stay unit, and a 15-place special care unit.

7. Construction is planned to begin in 1992, for completion by the end of 1993.
Figure 15  East Birmingham –
District mental health centre
East Birmingham

Notes

Overall philosophy

1. To be a district mental health centre, comprising a sector community mental health centre, located on a DGH site, with additional accommodation to support the community mental health centres serving the two other sectors of the district. (See also Example 3, Chapter 5.)

Functional content

2. The accommodation is defined primarily as the base for the mental health team serving one sector of the district, with:
   a. residential accommodation for 20 people (14 for the sector, and six district places serving all three sectors);
   b. day activity spaces for residents and day attenders;
   c. ECT;
   d. administration.

Comment

3. This design was produced as one result of the MARU study, reported in ‘Building for mental health’ (1991). The service policy for the district is for a locality (that is, sector) service, community-based, and delivered from a community mental health centre in each of the three sectors. In-patient care of acutely mentally ill adults remains primarily a sector function, hence there is in-patient accommodation (14 places) in each centre; the operational policy is largely implicit. The design in Figure 15 allows for additional district functions to be undertaken.

4. Not constrained by Nucleus, there is more extensive use of space. The day activities are less traditional, there being a much smaller proportion of space allocated to the traditional art/craft components of occupational therapy. The large number of small spaces (group rooms and interview rooms) implies therapeutic activity directed at restoration of social functioning and individualised treatment plans for both in-patients and day attenders. The range of rooms provides for flexible responses to service development.

   “... the decision to disperse adult acute services across three community mental health centres is strongly influenced by the desire to develop services that are local, accessible in the widest sense to the community in which people live... options which segregated the in-patient service from the other service components would militate against such objectives.”

One implication of this policy is that the day component may not function solely for people who are acutely ill. The range of rooms makes this feasible, with an emerging function as a “generic” day hospital for a sector with “acute/crisis care” bed backup.

6. More speculatively, given the Dean and Gadd study, the sectors may not ultimately require the number of in-patient places being provided for acutely ill people. The “design to individuals” would appear to provide sufficient flexibility for the accommodation to be used for other (mental health) purposes.

1992 district update

7. The first-floor accommodation will now provide 10 offices and a staff changing facility. ECT provision will now be located in the unit for elderly people with mental illness. Education and training of care staff is now an explicit function.

8. Building is to start during 1992, and an associated paper states that:
   “... the team is convinced that if it had gone for a more costly hospital traditional model of service then it would have obtained approval far earlier. Formal approval for services which develop alternatives... using planning processes which engage a wider range of stakeholders... will take longer to secure. Ultimately... long term gain will outweigh the short term delay.”
Appendix 2

Summary description of a Nucleus hospital
Nucleus hospitals

A briefing and design system developed by the Department of Health, London

1. ‘Nucleus’ is a standardised briefing and design system for hospital buildings. It can be used to design a small intensive use first phase of a hospital, which is capable ultimately of expansion to full District General Hospital (DGH) capacity.

2. A DGH serves a population of about 250,000 and provides a full range of hospital services, which include diagnostic and treatment facilities for out-patients, in-patients and day-patients.

3. Hospital policies and briefs on which Nucleus designs are based, reflect the following aims and objectives:
   - to produce designs for a first phase Nucleus hospital of about 300 beds with the capacity for growth and change up to 800 beds. Occasionally 500-600 beds are planned as a single phase
   - to provide choice of content so that the first phase might be tailored to different service planning priorities
   - to seek the utmost economy in capital and running costs consistent with acceptable clinical and service standards
   - to limit the support services in the first phase to those needed to sustain the service provided in that phase
   - to achieve multi-use of space by good functional relationships and clustering of departments
   - to cater for a reasonable range of sites, including sloping sites; to plan for 2 storeys preferably but with the ability to go up to 3; to make maximum use of natural light and ventilation and to meet new fire, and means of escape, requirements
   - to give complete freedom to design teams in their choice of constructional method and elevational treatment

4. The fullest use has been made of the experience, material and techniques developed in earlier Department of Health work, particularly from the ‘Harness’ and ‘Best Buy’ programmes.

5. Nucleus standard plans are set in the context of the Whole Hospital policy framework and a geometric planning discipline.

Building form

6. Nucleus departments are designed in ‘templates’ of 1000m$^2$ or 1100m$^2$ containing whole departments, or clusters of smaller departments. Different building forms are used for the service areas such as the kitchen. The selection of the template shape was the outcome of considerable research into the standardisation of departments and their relationships.

7. Below are examples of how standard departmental templates can be assembled to form a first phase DGH and how, subsequently, controlled expansion can take place.
Examples of clinical templates

Hospital departments can expand in the following ways:

- Internally by planned misuse of accommodation
- Externally by straightforward addition of more accommodation

Nucleus in use

8. Projects use the Nucleus planning and briefing system in various ways:
   - without adapting the standard department plans
   - modifying the standard department plans
   - using the briefing data only for one-off designs.

9. Projects use Nucleus:
   - for new sites, as the first phase of a new District General Hospital
   - as the first phase of redevelopment of an existing Whole Hospital site
   - as a single phase addition to an existing hospital
   - as a single phase new DGH.

10. Benefits in using Nucleus:
    There are major benefits in using the Nucleus planning and briefing system:
    - Planning and design time can be reduced by up to 2 years if the standard department designs or its options are used unmodified
    - Considerable cost savings are made by: reductions in fees paid to design consultants - reductions in the involvement of scarce project team, and health planning personnel - reductions in capital costs - reductions in running costs

Nucleus information

11. The first Nucleus hospital was completed in 1981. There are now about 130 schemes in the hospital building programme, of which 65 are completed, and the remainder at construction or planning stages. This represents a capital investment of over £2.0 billion (1991 figures) including fees and equipment.

Nucleus and Low Energy

12. The world's first two Low Energy demonstration projects, using the Nucleus planning system, at St Mary's, Isle of Wight and Wansbeck, Northumberland, are expected to achieve energy savings of 50% and 60% respectively. The hospitals will demonstrate the application of energy conservation measures, the application of heat recovery techniques and the determination of site energy strategy.
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Common Concern, MIND. 1983.


(Given below are details of all Design Guides and Health Building Notes which are either published by HMSO or in preparation. A Design Briefing System Notebook is available with Health Building Notes marked (**) - information is given within the Notebook on how it may be used. Information is correct at time of publication of this Design Guide.)

**Design Guides**

- The design of day nurseries with particular reference to District General Hospitals, 1991. HMSO
- The design of Community hospitals, 1991. HMSO
- The design of hospital main entrances (in preparation)

**Health Building Notes**

2. The whole hospital - briefing and operational policies, 1992. HMSO
3. The design of the hospital (in preparation)
4. Adult acute ward, 1990. HMSO
5. -
6. Radiology department, 1992. HMSO
7. -
9. -
10. Catering department, 1986. HMSO*
11. Catering - Central processing unit and satellite accommodation (in preparation)
12. Out-patients department, 1989. HMSO*
12. Supp 2 Oral surgery; Orthodontics; Restorative dentistry, 1992. HMSO
13. Sterile services department, 1992. HMSO
14. -
15. Accommodation for pathology services, 1991. HMSO
17. -
19. -
21. Maternity department, 1989. HMSO*

Health Building Notes published by HMSO can be purchased from HMSO Bookshops in London (post orders to PO Box 276, SW8 5DT), Edinburgh, Belfast, Manchester Birmingham and Bristol or through good booksellers.

Enquiries (but not orders) should be addressed to: The Publications Unit, NHS Estates, Department of Health, Room 540, Euston Tower, 286 Euston Road, London NW1 3DN. (From April 1993 - see overleaf.)

22. Accident and emergency department, 1988. HMSO*
23. Hospital accommodation for children, 1984. HMSO*
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