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THE NEW MAIDSTONE DISTRICT HOSPITAL

PHASE 1

Notes on the functional content and design

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(Kin)

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INTRODUCTION

The new Maidstone District General Hospital is being built on the Oakwood site which lies about 3 miles to the West of Maidstone. Phase 1, which is due for completion in April 1983 will provide a 300 bed hospital. Possible later phases could enlarge the hospital to one of 700 or 800 beds.

The design of the majority of Phase 1 is based on the Nucleus principles of planning and design although a significant minority of the Scheme is non-standard in planning detail to meet the needs of the Maidstone Hospital which are not covered by the standard Nucleus design.

Plans of the Ground Floor and First Floor of Phase 1 are included as appendices to this report.

THE FUNCTIONAL CONTENT

The functional content of Phase 1 of the hospital is described below:-

DEPARTMENT	FUNCTIONAL CONTENT
MAIN HOSPITAL	
Adult Acute	112 Beds (4 x 28)
Children	46 Beds (2 x 23)
Geriatric	24 Beds
Operating	4 Theatres
Adult Day Care	15 Beds, 20 sitting places
Accident and Emergency	110 Patients per peak 3 hour period
(a) Major Treatment	Ditto
(b) Fracture and Orthopaedic Clinic)	27 Doctor Sessions
ITU/Coronary Care	8 Beds
Outpatients:	
Consulting Suites	27 Doctor Sessions
Pharmacy (excluding bulk manufacturing and bulk stores)	300 Beds
x-ray	4 R/D Rooms

Administration	9 Points
Main Entrance	9 Points
Medical Records	9 Points
Staff Changing	436 Places
Medical/Nursing) Management)	Medical (3 offices) Nursing (5 offices)
Education	Based on area of two rooms only
Rehabilitation	Part provision for 20,000 population less Hydrotherapy, Gymnasium and complete heavy workshop +
Central Treatment	4 Rooms (2 for Adult Acute + 2 for Adult Day Care)
On Call Rooms	3 Rooms (en suite with overnight stay accommodation)
Maternity:	
(a) Wards	76 Beds
(b) Delivery	76 Beds
(c) Special Care Baby Unit	20 Cots
(d) Clinic	10 Doctor Sessions
(e) Reception) Administration) and Education)	Department (76 Beds)
(f) Milk Kitchen /Store Substores, Flying Squad	Department (76 Beds)
Ultrasound Unit	Department
SERVICE CENTRE AND PATHOLOGY	
Pathology	20 LSU
Mortuary + PM Room	300 Beds * (excluding isolation facilities

Dining	300 Meals
Kitchen (excluding bulk food store)	600 Meals
HSDU	4 Theatres; 300 Beds*, A & E; treatment for day care; central delivery
Distribution Store	Part department; based on area
Works Department	Part department; based on area
Telephone Exchange	180 Extensions
Boiler House	2,700 kw.

* Although the bed count for Maidstone is less than 300, the functional content for these departments is as Neutral Nucleus as the standard department is being used.

\+ Although the catchment population for Maidstone is less, the above statement applies also to those departments based on population function.

The main clinical element of Phase 1 of the New District General Hospital is to be in accordance with the Department of Health and Social Security's standard Nucleus Hospital design and contains 12 clusters or templates (6 per floor in a two storey group of buildings).

The non-Nucleus elements can be divided into two categories:-

i) Non-standard departments or parts of departments, within the envelope of a normal Nucleus template (e.g. OPD, obstetrics clinic, medical records, geriatric nursing sections, ultrasonics in X-ray, dirty utility rooms in nursing sections).

ii) Departments or groups of rooms which are in non-Nucleus buildings (including for example the entrance hall block, pathology, stores and stores' reception, catering, boiler house and ancillary service structures).

Although at Maidstone the Service Centre cannot be of standard Nucleus design since, for example, it contains a pathology department and only a small stores' area, it has been planned to incorporate, as far as is possible, standard Nucleus elements. At Maidstone this can be only the hospital sterilising and disinfecting unit (HSDU), although catering and mortuary will follow Nucleus design principles as closely as possible.

The Phase 1 buildings - their communication and circulation in particular - have been designed to allow the hospital ultimately to expand into a District General Hospital containing up to 800 beds.

The central boiler house with its ancillary buildings has been designed so that it can be extended, not only to deal with the

needs of the new hospital, but also with those of the existing Oakwood Hospital, the main mechanical plant of which is coming to the end of its useful life.

In addition to space for ambulances, service vehicles and bus lay-byes, parking for about 300 private cars will be provided.

THE SITE

The site consists of two parcels of land about 3 miles to the west of Maidstone. Its major portion - about 150 acres (60 hectares) in area - is bounded on three sides by roads; it contains the existing Oakwood Hospital togehter with its major support facilities. The existing buildings date from 1833 to 1906, with a Listed Order on one of the buildings. The smaller portion of the site across a road to the west is about 30 acres (12 hectares) and contains the Nurses' Home and Nurse Training Unit plus sports facilities.

The total area of the two parcels of land is therefore about 180 acres (72 hectares), but about 36 acres (15 hectares) to the north will probably be available for disposal for housing development, extending the existing residential use in the district.

The portion of the site which is most suitable for the new District General Hospital lies immediately to the north of the existing Oakwood Hospital and is about 35 acres (14 hectares) in area. Although giving the casual impression of being fairly level, it is in the form of a shallow although irregular saucer, where the differenc in ground level between the highest and lowest point for the Phase 1 hospital buildings is about 7ft. (2.1 metres). The site has a history of subsidence and this has had to be taken into account in the structural design of the building.

AIMS AND PRINCIPLES OF PLANNING AND DESIGN

Even the first phase of a district general hospital represents a very large amount of buildings which can easily overpower its surroundings. An advantage of the Nucleus system of planning is that the buildings are low (generally two storey) and, with the cruciform shape of the standard templates, are broken up into wings and courtyards of a modest scale; only parts of the building can be seen at a time.

The Nucleus system of assembling the templates offers the options of future linear growth or of growth in several directions radiating from a central hub - the main entrance hall, for example. Taking into account the shape and character of the site, its contours, its relationship with Oakwood Hospital and distances of horizontal circulation, the second option, with the possibility of linear growth as well, has been adopted. It allows the entrance hall - which is the only public entrance other than those serving accident and emergency Department - to be and (with future extensions) to remain the hub of the hospital.

The siting of each department and its relationship with others

have been governed not only by functional needs but also by the character of the site - reasonable views but some traffic noise on the west side and a pleasant avenue of trees and fine views, both near and distant, on the east. For the first Phase it has been possible to locate all the nursing sections (wards) on the east side.

The gently sloping tiled roofs with their overhanging eaves accentuate the domestic flavour of the design. The nature of their shape and their slopes allows generous space for horizontal services and allows the roofs to be constructed in the form of standard trusses which can economically span the whole width of a block, leaving the interior of the first floor generally free of columns. The detailed profiles of the roofs vary according to the amount and character of the services they carry or to the need for roof lights; thus, the roof over an air-conditioned area like the operating department takes on a slightly different character from that of a naturally ventilated department like a nursing section. The overall silhouette is further varied by the roof-top plant rooms which are designed as part of the tiled roofscape. The roofs of the non-standard departments (the entrance hall and the service block for example) while of similar character again vary in detail, as do those of the boiler house block.

In a typical Nucleus arrangement - and Maidstone is no exception - upper floor departments seldom coincide in use and character with those below them and the horizontal system of servicing and the division into fire compartments adopted by Nucleus are designed to eliminate any practical disadvantages which might otherwise follow. However, to allow windows to be of the right size and in the right position for each room on each floor and to give scope for possible future changes, the elevational design should be capable of naturally assimilating a somewhat random pattern of windows. At Maidstone the elevations have therefore been designed to appear in the form of horizontal strips - 'Window Strips', where windows can alternate with dark-toned and non-contrasting panels, and 'Apron Strips' below the windows which are treated in the manner of white weather boarding, a characteristic feature of many traditional buildings in Kent. The horizontal effect is however not over-emphasised due to the nature of the Nucleus template plan which generally restricts the unbroken length of any part of a facade to 16.2 metres (53 feet). The facades are further broken up by the occasional projecting bay window - at the ends of first floor nursing sections, for example.

The Nucleus plan, by the nature of the varied open spaces created by the grouping of its templates, gives wide scope for contrasting and attractive landscaping - sheltered, enclosed courtyards and semi-enclosed gardens between projecting wings, widening out in turn into the open landscape. In the smaller spaces in particular, the planting of new trees should be as generous as possible.

Vast deserts of parked cars have ruined otherwise attractive hospital sites. Here, cost forbids the use of covered or partly covered car parks. Happily the formation of the ground floor

of the hospital at one level - without ramps or steps - can be economically created by using the ground excavated for levelling to form mounds which surround the large car parks which are on the west side of the hospital; there will also be generous tree planting within the car parks themselves.

STRUCTURE AND EXTERNAL FINISHES

In order best to meet the demands of flexibility, economy, fire resistance and speed of construction, a reinforced concrete structure, cast in situ, for all the main buildings is proposed consisting generally of a flat slab floor construction and square columns. The sloping roofs are lighter and are supported on steel trusses spanning across the building. Because of the nature of the site with its history of subsidence, the superstructure is supported on a reinforced concrete raft foundation.

The notes below are a general description of the external finishes proposed. The final choice of certain elements, or of some of their details, may be influenced by a comparison of their estimated cost with the detailed cost plan which is being prepared by the Quantity Surveryor, D.H.S.S.

The construction of the external walls, are a non-structural infill to the reinforced concrete frame. That construction and the disposition of the windows, apart from needing to meet normal building requirements, must respond to the demands of a very high standard of thermal insulation (0.41 W/m^2K), to the restriction of the window area to not more than one quarter of the external wall area and to the requirement that the inner lining of the wall should be designed to incorporate a cavity behind it for branch runs of some of the engineering services.

External treatment of walls :- spandrel, or apron, panels below windows are of horizontal ribbed metal sheeting with permanent plastic coated protective cover and are generally white - of similar character to local white painted horizontal weather boarding; panels between windows are of similar material but dark in colour and arranged as flat vertical 'planks'; windows in dark toned aluminium frames are arranged as a combination of opening lights (glass louvres or, possibly, vertical sliding sashes) and fixed panes - generally single glazed, except in air conditioned areas where they are fixed and double glazed.

Walls of street links :- with lifts, stairs and escape doors the horizontal pattern of the external walls are different. Here, where walls are solid, they are of blockwork, externally rendered and painted, possibly in strong colours (the areas requiring periodic repainting would be small and easy to reach). Windows in the links would be generally as described above.

Roofs :- the normal pitch of the roofs is fairly low - $22\frac{1}{2}^{o}$. They are covered with interlocking slate coloured concrete tiles; the overhaning eaves, with their white soffits, (probably plastic covered metal as before) not only give protection from

glare but also avoid the meanness associated with some modern roofs; no attempt has been made to hide or camouflage the rainwater gutters and downpipes - they are in dark coloured metal or PVC and are expressed as a prominent feature which softens the horizontal emphasis in the elevational treatment and divides the building into bays of a domestic scale; where the low pitched roofs are capped with steeper pitched gables the gables are faced with slate coloured sheets (asbestos cement) with ribbed joints.

Boiler house block :- this is a building of industrial character with different requirements for walling and windows from those of the rest of the hospital; although the general pattern of the sloping roofs of the rest of the hospital is repeated, the walls and roof would be of metal sheeting as already described but would be used, on the walls, with vertical ribbing; the main windows of the boiler house hitself would be of aluminium patent glazing which allows an arrangement where glass and mullions can easily be removed on the rare occasions when boiler burners need to be removed, or heavy equipment moved in or out.

Boiler house chimneys :- to meet the requirement of the Clean Air Acts the chimney stacks (4 are initially required) must be not less than 27 metres (88 feet) high; these stacks are often incorporated into one thick and usually inelegant concrete stack standing free of the boiler house; here, the ground conditions are such that it is better to site light-weight stacks within the boiler house structure itself and standing on its raft foundation; the chimneys have therefore been expressed as a group of 'organ pipes' inside a delicate metal-framed supporting cage.

Stores and generator block :- viewed from outside the service yard, these ancillary structures will not be prominent, since part of the length of their enclosing walls can be concealed by grass banks, other parts by rough local stone walling from the demolished farm buildings.

External Works :- in addition to the normal grassing, planting and paved areas, there is to be an ornamental pool by the main entrance; near the east boundary of the site and about 100 metres to the south-east of the new hospital buildings, a storm-water delay reservoir, or 'lagoon', will be required. This is being treated as a permanent lake which should become an attractive feature in the hospital site.

These notes are based on the architect's (Powell, Moya and Partners) Report on Sketch Design to the South-East Thames RHA and DHSS - June 1978.

NOTES

SHADED AREAS INDICATE NON-STANDARD NUCLEUS

REVISIONS

INSERT

STORES AND GENERATORS

gates

CHILDREN

CHILDREN

MATERNITY

ADULT ACUTE

O.P.D.

DIABETICS CLINIC

TEL EXCH'GE

STORES RECEPTION

SERVICE YARD

MEDICAL RECORDS

COURTYARD

COURTYARD

N.E.D.U.

MED. RECS.

STREET LINE 1.

STREET LINE 2.

MAIN ENTRANCE

MORTUARY

HEARSE YARD

BOILER HOUSE COMPLEX

FRACTURE CLINIC

COURTYARD

STAFF CHANGE

MAIN WAIT

FORECOURT

PATHOLOGY CHEMICAL

ACCIDENT AND EMERGENCY

X-RAY

ADMINISTRATION

PHARMACY

REHABILITATION

footpath

ULTRA-SONICS

NORTH

BUS LAY-BY

AMBULANCE BAY

CAR PARKING

0m 5 10 15 20 25 30 35 40 45 50

SCALE IN METRES

POWELL MOYA and PARTNERS

SOUTH EAST THAMES REGIONAL HEALTH AUTHORITY

249-134

MAIDSTONE D.G.H.

GROUND FLOOR PLAN

PHASE 1

JUNE 1978

249-134

NOTES

REVISIONS

ADULT ACUTE

ADULT ACUTE

ADULT ACUTE

MATERNITY

MATERNITY

MATERNITY

STREET LINE 1.

STREET LINE 2.

TEL OPS.

EDUCATION

DINING

KITCHEN

BOILER HOUSE COMPLEX

PATHOLOGY HAEMATOLOGY

ON-CALL

CENTRAL TREATMENT

OPERATING THEATRES

M.S.

I.T.U.

A.D.C.

CENTRAL DELIVERY

S.C.B.U.

A

B

C

D

NORTH

0m 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100

POWELL BOYS and PARTNERS

SOUTH EAST THAMES REGIONAL HEALTH AUTHORITY

249-135

MAIDSTONE D.G.H.
FIRST FLOOR PLAN.
PHASE 1

JUNE 1978

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