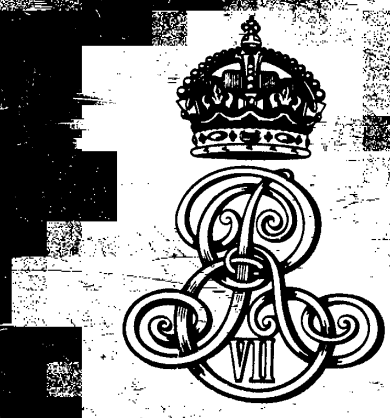

THE JUBILEE PROJECT

A REPORT ON A KING'S FUND PROJECT TO COMMEMORATE HER MAJESTY QUEEN ELIZABETH'S SILVER JUBILEE BY UPGRADING WARDS IN TEN OF LONDON'S OLDER HOSPITALS

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JANUARY 1981

KING'S FUND JUBILEE PROJ

A COMMENTARY AND REP

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Robert J Maxwell

Secretary

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COMMENTARY

King Edward's Hospital Fund for London began as a Jubilee Fund on the occasion of Queen Victoria's Diamond Jubilee. It was particularly appropriate, therefore, that on the occasion of Her Majesty the Queen's Silver Jubilee, the Fund should decide to mark the occasion by making a special contribution of £1 000 000 (increased with inflation to £1 235 000) for a special and specific project for the benefit of London hospitals.

Many of London's district general hospitals have not been rebuilt as had been planned in the early 1960s, and the prospect of this happening is becoming increasingly remote. Furthermore, in view of this illusory rebuilding programme, little renovation of older wards had been undertaken, resulting in poor morale and frustration amongst staff.

It was felt that the accommodation in the solidly built Victorian hospitals could be brought up to an acceptable standard for modern care of patients by refitting, with a corresponding benefit to staff morale. The time seemed appropriate, therefore, for the Fund to study this further and to demonstrate the likely advantages of, and also the problems associated with, refitting wards in ten of London's older hospitals.

This report has been written to supplement an exhibition at the King's Fund Centre which demonstrates the changes which have been possible as a result of this Jubilee Project. It records what has been achieved on a relatively limited budget without building extensions and without increasing running costs. In every ward refitted there has been a remarkable transformation from a dreary building to one which is interesting, colourful, and provides, for the first time, adequate sanitary annexes. The buildings have retained their familiar setting, unlike completely rebuilt, impersonal, modern blocks, and this seems to be appreciated by the local community. Although great improvements have been effected, in no case has the full standard of a modern newly built ward been achieved, but time may show that a very reasonable compromise has been reached. Certainly there is general agreement that the refitted wards have increased the comfort for the patients, and have provided greater convenience for nursing routines and better facilities for the doctors. Attention is drawn to the following benefits.

All the schemes provided space consistent with DHSS guidance for the patients in the ward areas, which allowed for the siting of bedside lockers, bedside service units containing essential nurse-call buttons, and radio sockets, over-bed tables and curtain rails for each bed.

Most schemes provided vastly improved day spaces for the ambulant patients.

The most significant improvement in all the schemes was the provision of proper sanitary facilities for patients, including assisted WCs, assisted bathrooms and proper washing cubicles, and for the nursing staff, separate dirty utility rooms for the disposal of bed pans, soiled and dirty linen. At the time of planning these projects, the DHSS hospital building note 4 (5) recommended the provision of washing cubicles, and these appear to have been very popular in use in the renovated wards.

Ward pantries have been greatly improved for the better presentation of food, and to give nurses the facility to provide the occasional hot drink or special dishes.

All the schemes have taken the opportunity to bring a fresh look to walls, to the soft furnishings, and to provide better furniture.

Proper fire resistant materials have been installed.

In only one scheme was the DHSS preferred number of single-bed wards achieved, and this was the special case of the Queen Elizabeth Hospital for Children. Only a few achieved private sanitary accommodation opening directly off an individual single-bed ward. In some cases, the space in the single-bed wards is minimal.

It has not been possible to make a detailed analysis of the cost or values of improvements in the engineering services, although in all cases better facilities have been provided, for comfort and convenience of both patients and nurses. In some cases, because of the reduced volume of the wards, a saving in the costs of heating can be assumed.

This report includes details of the individual units refitted, with a comparative cost analysis. The commentary is not an evaluation, neither does it set out to bring together all the relevant information and performance studies in the same way as Noble and Dickson did, for their report, Ward Evaluation: St Thomas' Hospital (11). Our commentary is built upon simple observations made during the tours of inspection of each of the hospitals on completion, and from discussions with the staff. The following general observations can be made.

Most of the hospitals are sited in areas where they have provided an established service for many years and they are appreciated by the public they serve. Most have an ambiance and environmental quality that is appreciated by the people in these localities. By raising the morale of the staff by better, if not perfect, conditions, a better hospital service is given.

A reduction in the number of beds after renovation has been necessary in most of the wards to provide the essential improvements in facilities.

The work of renovation can be done quickly (in most of the schemes, within 18 months) and with a minimum of interruption of the other hospital services.

It is not efficient to spend money on large-scale renovation of wards if the wards themselves are badly sited in relation to theatres, radiology, laboratories, kitchens and supply departments.

The Fund's contributions were not of the magnitude to test whether the DHSS standards of facility and space could be achieved by a full replanning of old-type Nightingale wards. The building of additional accommodation on to excessively high wards, might be counter-productive in cost.

The Fund recognises that ten projects do not necessarily provide a sound statistical basis for large-scale planning strategies or policy decisions. What the Jubilee Project indicates is the great diversity of facility and space in so many of our hospitals. Individual assessment is required in each hospital before determining the scale of investment which would produce a useful return in better facilities.

The Fund's Visitors were impressed by the pragmatic way in which all the participants faced the often conflicting claims of facility, space and cost. The overall results indicate that if one insists on providing all the facilities required in the building notes, with the recommended spaces, the cost of renovating existing wards is likely to cost more than building new wards. Nothing in the Jubilee project alters the conclusion which the late Lord Holford came to in the 1950s when considering the replanning of St Thomas' Hospital, that the replanning of the existing and highly recommended Nightingale Wards to contemporary standards was greatly in excess of the cost of demolition and building new wards. This does not mean that useful improvements cannot be affected in old wards, to provide better facilities for patients, nurses and doctors, by the allocation of sums of money smaller than DHSS cost allowances for a new ward. There are general indications in the Jubilee schemes of ways in which this can be done, and the common factor is a reduction in the number of beds to provide the space for the better facilities within the perimeter of the existing buildings.

HOSPITALS AND WARDS UPGRADED

The hospitals concerned and the wards which were renovated, were:

Name and address of the wards and the Hospitals	Abbreviated name used in report
South London Hospital for Women and Children Queen Mary Ward Clapham Common, London SW4 9DR	South London Hospital
Hackney Hospital Avery Jones Ward Homerton High Street London E9 6BE	Hackney Hospital
Hither Green Hospital Caroline Ward Hither Green Lane London SE13	Hither Green Hospital
Queen Elizabeth Hospital for Children Connaught and Barclay Wards Hackney Road London E2 8PS	Queen Elizabeth Hospital
Hammersmith Hospital C1, C3 and C5 Wards Du Cane Road London W12 OHS	Hammersmith Hospital
St Stephen's Hospital Hans Sloane Ward Fulham Road London SW10 9TH	St Stephen's Hospital
St Charles' Hospital Addison and Mary Wards Exmoor Street London W10 6DZ	St Charles' Hospital
Whittington Hospital A10 Ward Highgate Hill London N19 5NF	Whittington Hospital
The Prince of Wales's Hospital Victoria Ward Tottenham Green East London N15 4AW	The Prince of Wales's Hospital
Dulwich Hospital Alleyn Ward East Dulwich Grove London SE22 3PT	Dulwich Hospital

Eight of the ten hospitals were built in the nineteenth century.

The oldest hospital ward was the one at Hackney Hospital, opened 130 years ago, and the newest was the Queen Mary Ward at the South London Hospital, opened in 1916. The projects included ex-workhouses built under the old poor laws, infirmaries, local authority hospitals and special hospitals, for example, for infectious diseases. The basic requirements and the state of maintenance varied, but all the proposals were interesting. Seven schemes were for Nightingale wards which varied between 22 and 26 feet in width and accommodated from ten to 14 beds on each side at right angles along the external walls. Sanitary annexes were most inadequate and were invariably in towers at one end of the larger open wards. The other supporting facilities were located in the short corridor connecting the wards to the main staircase and/or to the lobby. Most wards had high ceilings, sometimes over 13 feet, which meant that heating costs were high. Most had inadequate low temperature hot water radiators as the principal form of heating. All the wards and ancillary accommodation were ventilated naturally through the windows, and via permanent air vents.

In most cases, the high cost of adding accommodation and providing additional capacity on the engineering plants ruled out expansion. Therefore, most of the replanning of the wards has been done within the perimeter of the existing buildings. The South London Hospital and The Prince of Wales's Hospital were exceptions in this respect. An interesting proposal came from St Charles' Hospital where two Nightingale wards and the spaces between them were used to give flexibility in use of the ward for men and women patients. Whilst this was one of the more expensive projects, it came nearest to the DHSS guidelines in providing the facilities and spaces, but at the expense of a reduced number of beds.

SOUTH LONDON HOSPITAL

South London Hospital for Women and Children, which was established for women who prefer to be treated by women, was opened in 1916 and has 217 beds. Queen Mary Ward, reconditioned under the Jubilee Project, was officially re-opened in May 1980.

Before renovation, the ward had 19 beds placed in a typical Nightingale alignment, at right-angles to the external walls and between the windows. In addition, there was a three-bed ward and a single-bed ward, making a total of 23 beds. Replanning included an extension for additional sanitary accommodation, all other alterations being achieved within the existing structure. The improvements which were carried out provided the following facilities.

A 17-bed ward, which contains a sister's office and nurses' station, and two single-bed wards - a total of 19 beds. Features include modern bed-head units incorporating a nurse-call system and piped oxygen and vacuum supplies

A reconstructed and improved day space

A new sanitary annexe off the main ward, containing assisted baths, assisted WCs, and washing facilities. There is another bathroom, with a bidet, and a separate wheelchair WC near to the single-bed wards

A separate dirty utility room and staff toilet

A renovated ward pantry

An improved waiting area

A clean utility room with shelving for CSSD supplies

A staff cloakroom, and additional storage facilities

HACKNEY HOSPITAL

Hackney Hospital is in the St Bartholomew's teaching group and has 540 beds. Avery Jones Ward, previously known as H5 ward, consisted of two Nightingale wards, and is in the old workhouse block which was partially rebuilt from existing buildings in 1850. The ward was reconditioned and officially re-opened in November 1979 for the department of geriatric medicine.

The original wards were unusually wide and contained 25 beds at right-angles to the external walls. The patients' and nursing facilities may have been adequate for workhouse inmates, but they were severely limited for present day needs.

Improvements provided better facilities, specifically for nursing geriatric patients.

Sixteen beds arranged in bays of four with curtained cubicles, two two-bed wards and two single-bed wards

Improved sanitary facilities for patients, with assisted washing cubicles, bathrooms and WCs, in accordance with DHSS standards

A large day space for patients, with eating and recreational facilities

An improved pantry near the day space; meals to bedridden patients being provided from food service trolleys

Improved nursing facilities; treatment room, dirty utility room and ample storage space for linen and other items

A sister's office adjacent to the day space to aid supervision

A staff cloakroom

HITHER GREEN HOSPITAL

Hither Green Hospital, originally designed as a fever and isolation hospital in 1897, is now a general hospital, with 358 beds. Caroline Ward was re-opened in September 1979 for the nursing care of medical patients.

When originally built, Caroline Ward conformed to the high space and construction standards of the time. The then fashionable belief in the benefits of fresh air was apparent in the height of the ward, the ventilated 'cut-offs' leading to sanitary annexes, and the open corridors between wards.

Before renovation there were 25 beds in the main ward, a two-bed ward and a single-bed ward, making a total of 28 beds. The renovation, the bulk of which was carried out within the existing structure, provided the following features.

A subdivision of the ward to provide seven beds and a nurses' station in one section; and nine beds, four single-bed wards and a sister's office in the other section - a total of 20 beds. False ceilings were installed to reduce the height of the ward and thus, save on heating bills.

Additional and improved sanitary facilities are sited at each end of the ward; this arrangement makes it possible to use each section of the ward for men or women. The sanitary facilities comprise washing cubicles, assisted bathrooms, assisted WCs with wash basins and one with a bidet

A reception room, an interview room, and a waiting space for visitors

A large day space

An improved treatment room with storage for CSSD supplies

A staff cloakroom and toilet

A re-designed pantry for the service of meals and beverages

Increased storage space for linen and equipment

QUEEN ELIZABETH HOSPITAL FOR CHILDREN

Queen Elizabeth Hospital for Children, founded in 1867, is in The Hospitals for Sick Children group and has 147 beds. Originally planned on Nightingale principles, the hospital has, over the years, modified its nursing patterns and, where possible, adapted the use of its old wards to meet changing standards of care.

The nursing of sick children demands vigilant and constant supervision, and the facility to isolate a patient to prevent cross-infection. For these reasons, the improvements here did not follow the pattern for other hospitals but were the result of design-in-use studies of the requirements needed to meet today's high standards of paediatric care.

Two wards were reconditioned with the aid of funds from the Jubilee Project: Barclay Ward, which was re-opened in October 1979, and Connaught Ward, which was re-opened in July 1980. The renovation of Connaught Ward provided the following facilities.

A subdivision of the ward to provide one five-bed ward, two four-bed bays, five single-bed wards plus one bed for special observation purposes - a total of 19 beds. A new false ceiling was installed, and glazed partitions erected in the wards and the sister's office to aid observation

An enclosed area on the balcony to provide essential play space

Bathrooms, showers, and WCs to suit children of all ages, and a replanned dirty utility room

A treatment room with storage for sterile supplies

A redecorated ward pantry

Improved storage arrangements for linen, equipment and toys

Office space for the ward clerk at the entrance to the ward. A doctors' room, outside the ward, for consultations

HAMMERSMITH HOSPITAL

Hammersmith Hospital, which was built at the beginning of the twentieth century as a municipal infirmary and workhouse, became the first multi-specialty postgraduate hospital, when the Royal Postgraduate Medical School was established there in 1935. Three wards are being upgraded as part of the Jubilee Project - wards C1, C3 and C5.

C5 ward is being extended and renovated for the nursing care of surgical patients. Before renovation, it had 23 beds arranged in six-bed and three-bed bays, together with two single-bed wards. Apart from minor improvements, the ward structure and facilities were much as they had been when built some 70 years ago. The renovation comprises altering and re-arranging ancillary rooms and providing other amenities in a new brick-built extension, with a suspended ceiling at one end of the ward block. These improvements will provide the following facilities.

A 25-bed ward subdivided by half-glazed partitions into three six-bed and two three-bed bays, together with one single-bed ward with its own bathroom

Day space for patients and visitors equipped with a nurse call system and window blinds

Additional sanitary facilities comprising an assisted bathroom plus a small bathroom; WCs, including a wheelchair WC; washing cubicles and a cleaner's room

Separate dirty and clean utility rooms, and replanned storage space

A sister's office, a doctor's room and a staff cloakroom

A new external fire escape staircase

ST STEPHEN'S HOSPITAL

St Stephen's Hospital was built as a workhouse infirmary in the late 1870s. In the 1930s it became an LCC general hospital and in the 1960s it was partially redeveloped and became a district general hospital with some 420 beds.

Hans Sloane Ward, one of the wards remaining in the original buildings, was renovated under the Jubilee Project and officially re-opened in September 1980. This was in line with the policy of upgrading the ward in the older part of the hospital, as financial resources become available. The ward is used for medical and, particularly, rheumatology patients. The upgrading has met the needs of modern care by providing the following facilities.

A ward, subdivided into a 10-bed area and a four-bed area, together with two single-bed wards - a total of 16 beds where formerly there had been 20 in typical Nightingale alignment

A new day space for patients

A complete refitted pantry

A doctors' room with provision for teaching and a replanned sister's office

A new cloakroom with toilet facilities for staff

A completely renovated patients' sanitary annexe and dirty utility room

False ceilings and double-glazed windows, and piped medical gases and new bed-head units

ST CHARLES' HOSPITAL

St Charles' Hospital which opened in 1881 as the St Marylebone Infirmary for the Sick Poor, is now a general hospital and has 350 beds.

Addison Ward and Mary Ward were upgraded with the aid of funds from the Jubilee Project and were re-opened for medical patients in October 1980. Before upgrading, the two wards, which were built on Nightingale principles, provided 21 beds for men and 23 beds for women. Six of the latter were situated in the central unit between the two wards and this arrangement allowed some flexibility in catering for an increased number of men.

This flexibility has been continued in the upgraded wards, and there are now two four-bed wards and one two-bed ward in the central unit, which can be used for either men or women. Each of the main ward areas has three single-bed wards for high-dependency patients and three two-bed bays, plus one three-bed bay for medium-dependency patients - a total of 12 beds in each.

The reconditioning included the provision of suspended ceilings and the upgrading of medical gases and bedhead services. Other improvements, all carried out within the existing structure, provided the following facilities.

A sister's office and an adjoining nurses' station, sited centrally within each main ward

Improved sanitary facilities, sited in an annexe each end of the ward block and in the central unit. Each annexe contains a WC, an assisted WC, a bathroom and a shower

A large assisted bathroom and another assisted WC, sited within each of the main wards

Washing facilities in each of the WCs

Improved clean utility and dirty utility rooms for each ward

Adequate general and linen storage accommodation

A re-equipped ward pantry in the central unit to serve both wards

A doctors' room with provision for teaching, a large endoscopy room, a staff cloakroom and a cleaner's room, all sited in the central unit

WHITTINGTON HOSPITAL

Whittington Hospital consists of three wings which originally were separate hospitals. St Mary's began in 1846 as a smallpox and vaccination hospital. Highgate and Archway, in which Ward A10 is situated, were built in 1868 and 1879 as poor law infirmaries. In 1929 they were taken over by the LCC, and in 1948, when they amalgamated, were renamed in tribute to Dick Whittington.

Ward A10 originally had 39 beds but these were reduced to 30 before the ward was closed in 1978 as unsuitable. It was then used for physiotherapy before being upgraded. Renovation was carried out within the existing structure, but mechanical and electrical services were entirely replaced and a false ceiling was installed. Other improvements provided the following facilities.

A ward comprising four six-bed bays, one three-bed bay and two single-bed wards - a total of 29 beds. One of the single-bed wards has a sanitary annexe for isolation purposes

Additional and improved sanitary arrangements, sited at each end of the ward, provide some flexibility if the ward is used for both men and women

A separate WC for staff, their cloakroom being off the main staircase

Improved clean utility and dirty utility rooms, a linen store and a nurses' station

A sister's office with adjoining waiting space

A new day space near the refurbished ward pantry

A room which can be used for seminars or for relatives staying overnight

THE PRINCE OF WALES'S HOSPITAL

The Prince of Wales's Hospital, which was founded in 1867 by Dr Michael Laserson as the Evangelical Protestant Deaconesses' Institution, is now a general hospital with 197 beds. Victoria Ward is an acute medical ward for women.

The original layout of Victoria Ward was in the Nightingale tradition with 20 beds in the main ward, plus two single-bed wards. The old ancillary accommodation for sanitary facilities, treatment room, dirty utility room, pantry and day space, was no longer suitable to meet the needs of modern care. The improvements carried out included, at

semi-basement level, a new vacuum plant and medical gas storage facilities, funded by Enfield and Haringey Area Health Authority. Renovation at ward level provided the following facilities.

A 20-bed ward plus a single-bed ward, with a nurses' station sited centrally in the main ward

A sister's office at the entrance to the ward and a new treatment room

A new sanitary block containing assisted bathrooms, assisted WCs, a Medic bath and a washing cubicle

Another bathroom and WC next to an improved dirty utility room within the existing building

A new day space for patients, a pantry, improved storage accommodation and a new cleaner's room

A suspended ceiling to break up the volume of the ward, a purpose-designed perimeter services duct integrating convector heaters and bedhead services, and an upgraded central hospital heating plant

DULWICH HOSPITAL

Dulwich Hospital, which was built in 1887 as a poor law infirmary was known as Champion Hill Infirmary of St Saviour's Union. The wards embody the classic Nightingale features of the period. The hospital is now a general hospital and has a bed complement of 297.

Alleyn Ward, which was reconditioned under the Jubilee Project, was officially re-opened in August 1980. In earlier times, it had 29 beds in all - 24 in the main ward, plus a two-bed and a three-bed ward. Then, primarily because of lack of space, the number of beds in the main ward was reduced by six. Later, Friends of the Hospital gave funds for a separate day space and thus alleviated some problems and gave scope for other developments.

The recent improvements provided the following facilities.

A main ward of 18 beds in curtained cubicles, plus a replanned two-bed and a three-bed ward - a total of 23 beds. Features include blinds for the west side of the wards and a false ceiling

A nurses' station, constructed as a raised observation cubicle overlooking the main and two-bed wards. Viewing panels are fitted in the doors of the three-bed ward

Assisted bathrooms, assisted WCs, and washing cubicles at the end of the main ward, a shower and a toilet off the two-bed ward and separate sanitary facilities near the three-bed ward

Better storage arrangements and well equipped dirty utility and clean utility rooms

A new staff cloakroom and a replanned pantry large enough to serve Byron Ward if necessary

COMPARATIVE STUDIES BEFORE AND AFTER RENOVATION

For the studies on Facilities and Space the DHSS hospital building note 4 (5) has not been used because it is seriously out of date and in process of being rewritten. Current thinking on the standards applicable (mainly to new works) will crystallise in the coming months, as questions such as the numbers of beds per nursing section are resolved. One of the exemplary designs being considered in new hospital building is the nucleus prototype at Pinderfields General Hospital, details of which are becoming quite widely known.

It embodies certain features which are non-standard and peculiar to the local situation.

Inclusion of (shared) treatment room and staff changing facilities

Addition of bay windows, slightly enlarging certain areas

Variations in storage arrangements

Nevertheless, it can still be adopted, with reservations, as an available baseline for the comparative studies.

For the purpose of these studies, the baseline used is a nominal half nucleus ward of 28 beds and accommodation shared with the whole unit of 56 beds.

The nucleus standards used in the tables are not strictly applicable to the Queen Elizabeth Hospital for Children. DHSS has studies of the nucleus ward planned for paediatric nursing, and if a more detailed analysis is required in this case reference should be made to those plans.

FACILITIES

Details of the facilities provided before and after renovation for each of the ten projects are shown in the Table 1 page 15. On the left hand of the table are the facilities provided in the prototype nucleus ward at Pinderfields General Hospital, Wakefield. The following columns show the before and after state of the wards in each of the hospitals which received a grant from the Jubilee Project.

Points of medical interest are noted at the bottom of each column.

SPACE

Details of the space for each facility as provided in the prototype nucleus ward at Pinderfields General Hospital, Wakefield are shown in the left hand column of Table 2 page 16 and the spaces provided for the same facility in each of the projects before and after renovation are shown in the following columns.

Table 3 page 17 shows the total area of the ward units before and after renovation and the areas related to the number of beds. It will be noted that the area per bed has increased in all the schemes.

For the purpose of comparison, the total ward area of the prototype nucleus ward at Pinderfields General Hospital, Wakefield is measured on the same basis as those on Table 3 as 1099.58 m2 and divided by the number of beds (56) gives an average of 19.64 m2 per bed.

COST ANALYSIS

It will be noted that because of inflation during the Jubilee Project, the Fund extended its contributions beyond the original allocation to £1 235 000.

Table 4 page 18 shows the cost of each scheme. All the schemes, except one, were the subject of competitive tender for the building work. Some of these were planned and supervised by the district works staff under the regional works officer; others were the work of private architects, engineers and quantity surveyors.

The work varied greatly. Where it was necessary to install new calorifiers for the renovated ward, which would also serve other wards, the cost was, as much as possible, included in the Jubilee scheme. In another case, replanned accommodation for the hospital nursing officers had to be included to provide the additional space for the wards as well as more convenient offices for the nurses. So there is no uniformity in the constituents of the cost of each project.

Most reports would shun any attempt to make deductions on cost on such 'wild' data and the Fund would not wish to place too much emphasis on the figures. The facts are merely reported as they occurred in the Jubilee Project. Years of experience has also indicated 'cost per bed' is a pernicious folly. However, the Jubilee Project indicates tendencies by which health authorities can make some assessment of the relative values of investment in old buildings against the cost of new buildings.

Table 5 page 19 shows a simple analysis of the building cost of each scheme totally and the cost per bed.

The pertinant spatial standards are those given in the DHSS hospital building note 4 (5) Ward units. The DHSS cost and area guide in Capricode Hospital Building Procedure Note for a 30-bed unit at January 1980 was £238 000. Thus the cost allowance per bed was £7 933.

(These figures do not relate to the prototype nucleus ward on which comparisons are made in the studies on facilities and space. The revised costs and area guide for nucleus nursing units have not yet been published)

Table 5 shows that the average cost per bed for the ten projects was £5 700. The lowest cost per bed, £2 319 was at Hammersmith Hospital, and the highest cost per bed, £10 500 at St Stephen's.

Seven of the ten projects were below the DHSS cost guidance figure.

TABLE 1
COMPARISON OF FACILITIES
BEFORE AND AFTER RENOVATION

FACILITIES	IN PROTOTYPE NUCLEUS UNIT PINDERFIELDS	HACKNEY HOSPITAL		DULWICH HOSPITAL		QUEEN ELIZABETH HOSPITAL		HITHER GREEN HOSPITAL		ST CHARLES' HOSPITAL [B]		ST STEPHEN'S HOSPITAL		PRINCE OF WALES'S HOSPITAL		WHITTINGTON HOSPITAL		SOUTH LONDON HOSPITAL		HAMMERSMITH HOSPITAL [D]	
Total number of beds	28	25	22	29	23	21	19	28	20	17	12	20	16	22	21	39 [C]	29	23	19	23	25
Single-bed wards	4	-	2	-	-	4	6	1	4	-	3	-	2	2	1	1	2	1	2	2	1
Multi-bed wards	4×6 beds	1×10 +1×15	4×4 +2×2	1×24 +1×3 +1×2	1×18 +1×3 +1×2	1×17	2×4 1×5	1×25 +1×2	1×9 1×7	1×17	3×2 +1×3	1×20	1×10 +1×4	1×20	1×20	3×10 +2×4	4×6 +1×3	1×19 +1×3	1×17	3×6 +1×3	3×6 +2×3
Day Space	1	-	1	1	1	1	1	-	1	-	1	1	1	1	1	1	1	1	1	1	1
Patients' Sanitary Facilities																					
Bathrooms	1 w/ WC + LB	1	-	2	2	1	1	2	-	1	1	2	1	2	1	3	1	2	1	2	2
Assisted bathrooms	1 w/ WC + LB	-	1	-	1	-	-	-	3	-	1	-	-	-	2	-	1	-	2	-	1
Assisted showers	1 w/ WC + LB	-	-	-	1	-	-	-	1	-	2	-	1	-	1	-	2	-	-	1	-
WCs	3 w/ LB	4	3	4	3	2	1	2	-	3	1	3	2	2	1	4	2	3	1	3	4
Assisted WCs (w/ bidet)	1 w/ LB	-	3	-	-	-	1	-	4+LB	-	2	-	1	-	2	-	2	-	3	-	1
Washing cubicles	-	-	4	-	5	-	2	-	-	-	-	2	2	-	1	-	4	-	-	1	3
Staff base/nurses' station	1	-	-	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	1	-	-
Clean supplies																					
Clean utility	1	-	-	1	1	-	-	-	-	-	1	-	-	-	-	1	1	1	1	1	1
Linen storage	1 (incl flower bay)	1	1	1	1	1	1	1	1	-	1	-	-	1	1	-	1	1	1	1	1
Equipment storage	1	-	1	1	1	1	-	-	1	-	-	-	-	-	-	-	1	-	1	1	1
Treatment room	1 [A]	-	1	-	-	1	1	1	1	1	-	1	1	1	1	1 lab	-	1	1	-	-
Dirty utility	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Cleaners	1 [A]	-	1	-	1	-	-	1	1	-	-	-	-	-	1	-	1	-	-	-	1
Pantry	1 [A]	1	1	1	1	1	1	1	1	-	-	1	1	1	1	1	1	1	1	1	1
Section office/sister's office	1	1	1	1	1	1	1	1	1 internal room	1	1	1	1	1	1	1	1	1	1	1	1
Doctors' office	1 [A]	1	-	-	-	-	1	-	1	-	-	-	1 in dr's office	-	-	-	-	-	-	-	1
Seminar/demonstration room	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	1 shared w/ relatives	-	-	-	-
Staff cloakroom	1 w/ WC + LB [A]	-	1	1	1	-	-	1	1	-	-	1	1	1	1	1	1	-	1	1	1
Trolley park	1 [A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1 for wheel chair	-	-	-	-
Visitors' waiting room	-	-	-	-	-	-	-	1	1	-	-	-	-	-	-	-	1	1	1	-	-
Disposal bay	1 [A]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

A shared with other section - total of 56 beds

B Mary Ward only excluding the central unit

C For full details, see P 10

D C5 Ward.

TABLE 2
SPACE ALLOCATIONS
BEFORE AND AFTER RENOVATION

FACILITIES	IN PROTOTYPE NUCLEUS UNIT PINDERFIELDS	HACKNEY HOSPITAL		DULWICH HOSPITAL		QUEEN ELIZABETH HOSPITAL		HITHER GREEN HOSPITAL		ST CHARLES' HOSPITAL		ST STEPHEN'S HOSPITAL		PRINCE OF WALES'S HOSPITAL		WHITTINGTON HOSPITAL		SOUTH LONDON HOSPITAL		HAMMERSMITH HOSPITAL	
Single-bed wards	10.23 m^2	-	7.5	-	-	7.6	8.5+13.0	9.0	9.0	-	8.8	-	11.0	7.3	10.3	12.3	12.5	12.2	12.2+14.0	15.0+8.0	12.9
Multi-bed wards	8.25-10.8 [A]	11.5	9.0	9.0	9.0	7.3	7.7	10.5	12.0	8.6	12.0+8.4	10.6	10.8	9.1	11.4	5.4 [D]	7.2	9.9	9.6	7.7	8.1
Day space	.86 m^2 p bed	-	3.9	2.8	2.8	3.5 incl bathing	1.5	-	1.8	-	-	0.9	1.1	1.3	0.8	0.4 [D]	1.1	1.6	1.6	0.8	0.9
Patients' sanitary facilities																					
Bathrooms	4.08	10.0	-	9.0+3.5	7.5+2.8	8.3	9.3	4.1	-	11.1	3.2	6.0	6.0	9.1+4.4	3.5	5.2	4.8	6.7	6.7	2.7	4.5
Assisted bathrooms	9.9	-	22.8	-	8.1	-	-	-	6.2+5.0	-	9.4	-	-	-	7.0	-	9.3	-	10.0	-	8.2
Assisted showers	4.08	-	-	-	3.4	-	-	-	3.3	-	2.0	-	5.2	-	3.9	-	-	-	-	2.1	-
WCs	3.63 + 1.4	1.2	1.5	1.3	1.5	1.5	1.6	2.3	-	1.4	2.0	1.5	1.5	1.7	2.0	1.2	2.2	1.3	4.5	1.2	1.6
Assisted WC (w/ bidet)	3.96	-	2.5	-	-	-	2.5	-	3.0+5.7	-	3.2	-	2.0	-	3.4	-	3.6	-	3.9	-	3.6
Washing cubicles	-	-	1.5	-	1.5	-	1.3	-	-	-	-	1.5	1.5	-	2.0	-	1.5	-	-	1.5	1.5
Staff base/nurses' station	17.4 [B]	-	-	-	5.0	-	3.5	-	7.5	-	4.8	-	3.0	-	7.5	-	10.0	-	9.0	-	-
Clean supplies																					
Clean utility	8.51	-	-	6.0	17.5	-	-	-	-	-	8.7	-	-	-	-	12.3	15.0	6.0	6.7	4.3	7.0
Linen storage	10.15 [B]	6.7	6.7	8.2	4.8	5.1	7.3	3.0	8.0	-	1.7	-	-	5.0	4.4	-	3.0	2.5	2.5	2.0	2.4
Equipment storage	4.4	-	6.2	1.0	5.0	7.0	-	-	7.8	-	-	-	-	-	-	-	6.0	-	6.7	3.7	4.3
Treatment room	15.84 [B]	-	11.2	-	-	9.6	9.6	14.0	14.0	9.6	-	14.5	14.5	9.5	12.7	51.0 as lab	-	7.0	10.0	-	-
Dirty utility	15.55	7.0	8.7	4.5	9.5	10.5	5.5	6.0	6.0	10.5	8.7	11.0	11.0	5.1	7.0	8.0	12.5	8.0	10.5	6.5	8.2
Cleaners	4.93 [B]	-	1.5	-	2.0	-	-	1.5	1.5	-	-	-	-	-	4.2	-	4.8	-	-	-	1.5
Pantry	5.85 [B]	10.0	11.2	9.1	14.0	6.9	6.9	21.0	10.0	-	-	13.7	13.7	10.2	10.2	17.2	17.2	13.0	13.0	13.5	13.5
Section office/sister's office	7.02 [B]	8.7	9.0	6.2	7.3	6.0	8.0	7.8	15.6 [C]	9.6	4.8	12.0	11.0	7.0	7.0	12.3	10.0	5.0	7.5	12.9	10.2
Doctors' office	10.03	5.4	-	-	-	-	5.1	-	7.0	-	-	-	13.8 in dr's office	-	-	-	-	-	-	-	8.2
Seminar/demonstration	-	-	-	-	-	-	-	-	-	-	-	-		-	-	-	15.0 [E]	-	-	-	-
Staff cloakroom	17.82 [B]	-	3.4	2.2	4.0	-	-	8.0	8.0	-	-	3.5	5.8	1.6	1.6	1.2	7.0	-	6.0	4.9	4.9
Trolley park	9.88	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2.0 [F]	-	-	-	-
Visitors' waiting room	-	-	-	-	-	-	-	2.8	2.8	-	-	-	-	-	-	-	6.5	6.0	6.0	-	-
Disposal bay	2.89	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

A Includes bay windows
B These areas are shared with the other section
C Includes reception office
D When ward contained 39 beds
E Shared with relatives
F For wheelchairs

TABLE 3

SPACE ALLOCATIONS

TOTAL WARD AREA AND AREA PER BED

	old area m2	No.of beds	area per bed m2 ratio	new area m2	No.of beds	area per bed
Hammersmith Hospital						
C1 Ward	340.65	22	15.5	378.00	22	17.2
C3 Ward	340.65	26	13.1	378.00	25	15.1
C5 Ward	340.65	23	14.8	378.00	25	15.1
Queen Elizabeth Hospital						
Connaught Ward	308.00	21	14.7	308.00	19	16.2
Barclay Ward	308.00	24	12.8	308.00	18	17.1
Dulwich Hospital						
Alleyn Ward						
before renovation	389.50	23	16.9	389.50	23	16.9
in earlier times	389.50	29	13.4			
Whittington Hospital						
A10 Ward						
before renovation	507.00	30	16.9	507.00	29	17.5
in earlier times	507.00	39	13.0			
The Prince of Wales's Hospital						
Victoria Ward	331.75	22	15.1	361.25	21	18.1
St Charles' Hospital						
Addison Ward (1)	313.90	24	13.1	313.90	17	18.5
Mary Ward (1)	313.90	20	15.7	313.90	17	18.5
St Stephen's Hospital						
Hans Sloane Ward	320.00	20	16.0	320.00	16	20.0
Hackney Hospital						
Avery Jones Ward	447.00	25	17.9	474.00	22	21.5
South London Hospital for Women and Children						
Queen Mary Ward	397.75	23	17.3	445.25	19	23.4
Hither Green Hospital						
Caroline Ward	451.00	28	16.1	484.00	20	24.2

Notes

1 The central area being common to both wards, for the purpose of these comparisons, has been shared equally between the two wards - both for total area and bed spaces.

2 Total areas of wards measured from inside external walls omitting the main staircase and lift wells.

3 The nucleus prototype ward measured on the same basis is 1099.58 m^2, which divided by 56 beds gives an area per bed of 19.64 m^2.

TABLE 4 TOTAL COST OF EACH SCHEME

HOSPITAL	TOTAL GRANT MADE BY FUND £	CONTRIBUTION BY HOSPITAL £	TOTAL COST £
HACKNEY HOSPITAL	75 000	64 000	139 000
HITHER GREEN HOSPITAL	80 000	12 000	92 000
PRINCE OF WALES'S HOSPITAL	150 000	28 000	178 000
QUEEN ELIZABETH HOSPITAL FOR CHILDREN	112 000	22 000	134 000
HAMMERSMITH HOSPITAL	123 000	44 000	167 000
ST CHARLES' HOSPITAL	110 000	113 000	223 000
SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN	115 000	26 000	141 000
ST STEPHEN'S HOSPITAL	140 000	28 000	168 000
WHITTINGTON HOSPITAL	191 000	79 000	270 000
DULWICH HOSPITAL	139 000	19 000	158 000
	£1 235 000	£435 000	£1 670 000

TABLE 5

COST RELATED TO NUMBER OF BEDS

	Total Cost £	Number of Beds	Cost per Bed £
HAMMERSMITH HOSPITAL	167 000	72 (3 wards)	2 319
QUEEN ELIZABETH HOSPITAL FOR CHILDREN	134 000	37 (2 wards)	3 722
HITHER GREEN HOSPITAL	92 000	20	4 600
ST CHARLES HOSPITAL	223 000	34 (2 wards)	6 558
DULWICH HOSPITAL	158 000	23	6 870
HACKNEY HOSPITAL	139 000	22	6 950
SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN	141 000	19	7 421
THE PRINCE OF WALES'S HOSPITAL	178 000	21	8 476
WHITTINGTON HOSPITAL	270 000	29	9 310
ST STEPHEN'S HOSPITAL	168 000	16	10 500
	1 670 000	293	Average 5 700

APPENDIX A

HOSPITAL REHABILITATION : THE WIDER CONTEXT

The Jubilee Project was not undertaken specifically to test in a rigorous fashion the merits of a general policy of rehabilitating hospital wards, but it is perhaps useful to place it in the wider context of hospital rehabilitation in this country.

Background

For much of the last two decades, thinking on hospital development has been dominated by the Hospital Plan of 1962 (Cmnd. 1604) (8). The paper noted that many hospitals were obsolete buildings and that even when they had been modified, many were essentially unsuitable for the work of a modern hospital.

The programme was to result in a substantial shift in the pattern of care by 1975. Throughout the country, services were to be centralised in district general hospitals (DGH) and many small hospitals were to be closed. Initially, it was proposed that DGHs should contain 600-800 beds. Later, in 1969, the report of the Central Health Services Council, The Functions of the District General Hospital (7) proposed hospitals of well over 1000 beds. Although these conclusions were never formally accepted by the government, they undoubtedly influenced the size of hospitals planned at the time.

It soon became clear that the original time scale was unrealistic, but the general policy of building a new remained. The main feature of capital expenditure in the NHS in the late 1960s and early 1970s was the concentration on large acute and general hospitals. The oil crisis in 1974 marked a steep decline in the UK economy and in real terms, in NHS capital investment. Capital expenditure dropped from £531 200 000 in 1973/4 to £431 400 000 in 1974/5 (at 1978 PESC prices). Subsequent government guidance on capital development (2,4,6) advocated a more flexible approach, but the real turning point came with the publication in May 1980 of the DHSS consultative paper on The Future Pattern of Hospital Provision in England. (1) In his foreword to this paper, the Minister for Health, Dr Gerard Vaughan, stated that although the policy since the 1962 Hospital Plan had been to concentrate service in large district general hospitals,

> 'few parts of the country are ideally served at present.... This state of affairs will continue if we go on pinning our hopes on too many major building projects which may be decades away. It would generally be better to concentrate on making the best of what exists.....'

The change of policy has been criticised, but it seems clear that the era of 'new money, new building' is over. Many older hospitals will remain in use and the state of the fabric and the current use of the buildings will need to be re-appraised.

Assessment of Hospital Stock

There were hospital upgrading schemes during the period of growth, but not many were written up. In recent years, however, the DHSS has commissioned a number of studies to assess the potential for renovating hospital buildings.

Not all old hospitals are suitable for rehabilitation to provide modern care. One study which looked at the potential for adapting small hospitals into community hospitals produced the following criteria. (3)

hospital available, and local need for community hospital beds

150 beds in the hospital

floor area of $\leq$ 10 000 m^2

age - probably before World War I

hospital classification - acute or mainly acute

not more than two storeys

sufficient room for expansion on site

shape of the building - not too complex or too fragmented

corridor widths adequate for traffic

logistical flexibility of building

good geographical relationship with community

good physical condition of fabric

A pilot study (3) of 13 hospitals showed that five hospitals did not meet these criteria and were not suitable for adaptation. The remaining eight hospitals fell into two categories.

those needing fairly minor alterations, and

those suitable for adaptation but requiring substantial structural work

The adaptation schemes were costed to give a broad idea of average costs in each case. Excluding professional fees, furniture and equipment, costs ranged from £290 000 for a 45-bed hospital which required only minor changes, to £1 300 000 for a 110-bed hospital with new buildings for nursing units. This gave a cost of £6500 ($\pm$ 50%) per bed for a hospital in the first category and £12 000 ($\pm$ 50%) per bed for a hospital in the second category.

In new buildings, the cost per bed in a community hospital is estimated to decrease as the size of the hospital increases. (The estimated cost for a new 150-bed hospital is £12 000 per bed, whereas for a 50-bed hospital it is £18 000 per bed). The costs do not take into account the acquiring of land or the demolition

of old buildings, whereas the adaption costs include demolition costs. The study concluded the cost per bed of building a new 150-bed community hospital would on the whole, be greater than the cost per bed of adapting an old hospital.

Most of the criteria listed above are perhaps self-evident, but perhaps the criterion for the preferred age of building may come as a surprise.

Age of the Building

There has been a tendency in the health service to assume that the older a building, the more likely it is to need replacing. A study by Devereux and Partners which was commissioned by the DHSS indicated that very often this was not so. One of the findings was the importance of a conclusive report by architects, surveyors and consulting engineers on the present condition, the anticipated life and the likely cost of maintaining hospital building. At a conference on 'Value for Money in Health Building' held at the King's Fund Centre in 1977, Colin Price-Davies, who was involved in the study, stressed the importance of understanding the characteristics of buildings of different ages. For instance, those built between 1850 and 1900 were generally very sound structures, although their roofs often needed attention because of poor maintenance. Those built between 1900 and 1919 were usually good for upgrading. But buildings of the period 1919-1948 were often found with corrosion of steel frames causing movement, cracking and displacement of brick work, disintegration of roof asphalt, distortion of casements, cracked glass and rainwater penetration. Even post-war buildings, not yet scheduled for upgrading, often needed repairs because of thermal movement in concrete floors and slabs and cracks in inadequate roof insulation. Age is not necessarily the best indication of suitability: each building has to be assessed individually.

Need for Flexibility

Even where the fabric of the building is suitable for rehabilitation, the layout may not be suitable for modern care and may be in the wrong place. The DHSS undertook an examination of 45 hospitals (a two per cent representative sample of the 2300 hospitals in the country) and over half were found to have considerable potential for use other than their current use. In a more detailed project, the DHSS has been working with the Merton, Sutton and Wandsworth AHA (T) (9) to examine the options for rationalising the use of three hospitals, one of which was the Nelson Hospital dating from the early 1900s, which had about 110 beds and provided a much valued service to the local community. The strategic plan saw the Nelson continuing indefinitely as a supporting or urban community hospital. Two miles away was a small, mainly geriatric, hospital. It was proposed to transfer services from this hospital to the 650 bed DGH serving that part of the area, but about five miles away and in another borough. The Community Health Council objected and the AHA requested a feasibility study of the option of transferring the geriatric

service to the Nelson Hospital. The initial idea was to move the geriatric service into the wing recently vacated when maternity beds had been transferred to the DGH. The accommodation proved unsuitable, but after modification it could re-provide beds for surgery, orthopaedics and gynaecology and a new theatre suite, thus freeing space on the ground floor for geriatric beds and day hospital beds. As Ceri Davies says, in How can we use better the hospitals we have?, 'the trick is to see hospitals as a chess board'. (10)

The capital costs of this scheme were £479 000 (March 1979 prices), but the annual revenue saving of at least £300 000, plus the potential valuable capital return from the sale of the second hospital. Sheila Howells, assistant area administrator of Merton, Sutton and Wandsworth AHA(T) has drawn four conclusions from this exercise.

> The role and content of small hospitals need not be so stereotyped, as a large DGH.
>
> Resources locked up in small urban hospital sites should be exploited far more.
>
> We need to take a more positive approach planning those small hospitals which have a long future.
>
> Such hospitals will need to be given a share of capital resources.

Conclusion

There has been a growing interest in rehabilitation of hospital buildings in recent years, and some detailed studies have been carried out to establish criteria for assessing the suitability of hospital stock for rehabilitation. The schemes carried out under the Jubilee Project, while not specifically testing those criteria, add weight to the evidence that hospital facilities and services can be substantially improved by the renovating of old buildings.

APPENDIX B

ORGANISATION OF THE PROJECT

The King's Fund invited two members of the Management Committee, Sir Robin Brook CMG OBE, and Sir Francis Avery Jones CBE MD FRCP, to be Visitors to supervise the distribution of the monies. The Visitors were aided in their work by a number of other members of the Fund's committees.

S M Gray FCE (Chairman of the Hospital Grants Committee)
L C Phipps OBE
T W Borges
The late Miss E Skellern OBE FRcN
C J Malim CBE
P E Sylvester MRCPsych MRCPath
J T Woodlock

The specialist advisers who assisted the Visitors were

S E T Cusdin OBE DSc AADip FRIBA (Architectural Adviser)
Miss S A G Garrett SRN RNT (Nursing Adviser)
Miss H O Allen BA SRN SCM RNT

Health Authorities responsible for London were invited to apply for grants and ten hospitals were chosen to be recipients. In some cases, the AHA and the hospital's League of Friends gave additional funds to deal comprehensively with equipping the renovated wards or with special structural or engineering problems.

Staff from the hospitals or health districts were invited to put forward their own programme of improvements and to make their own decisions on standards and priorities.

The Fund made no stipulations on standards of facility, space or finishes to be achieved, but expressed the intention that there should be no increase in running costs as the result of any remodelling of the old wards. Each application was dealt with on its merits.

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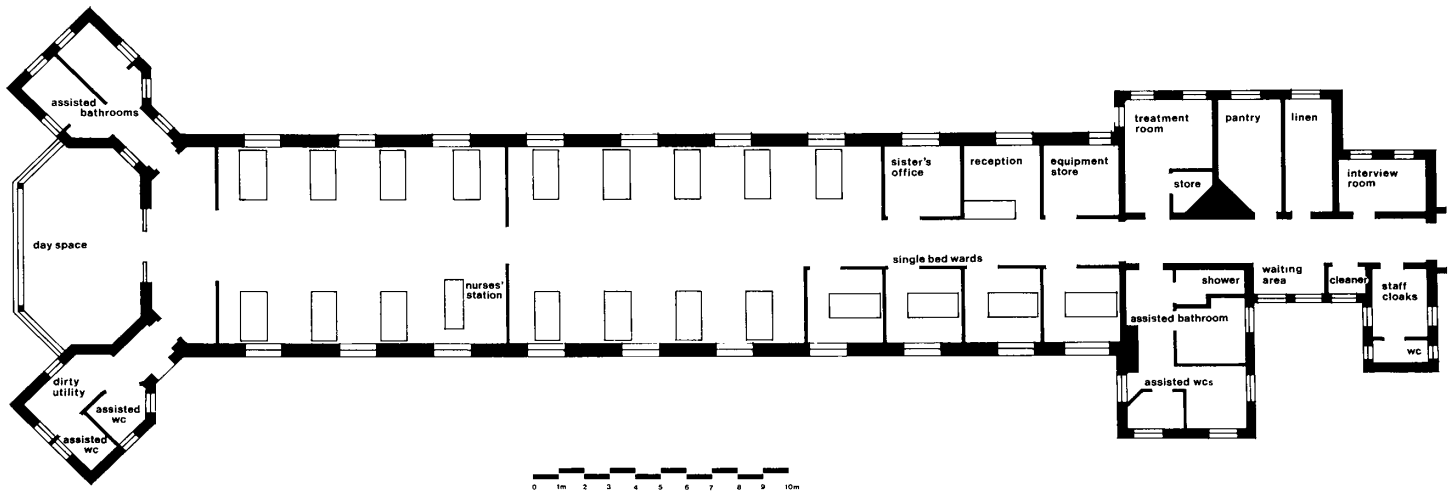
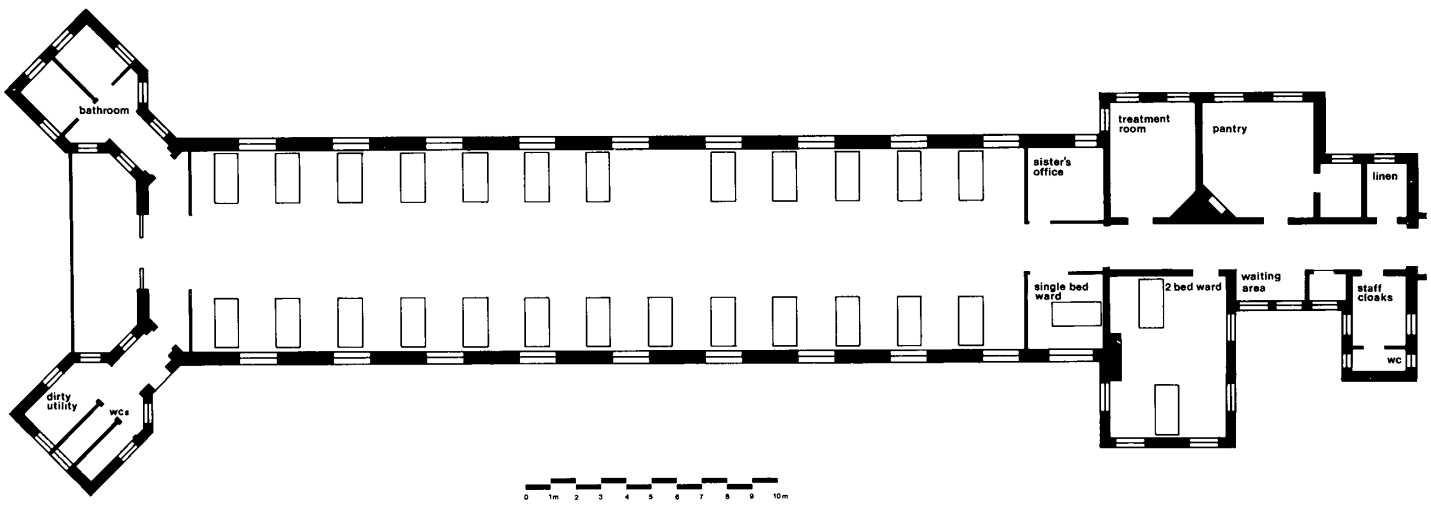
HITHER GREEN HOSPITAL

CAROLINE WARD



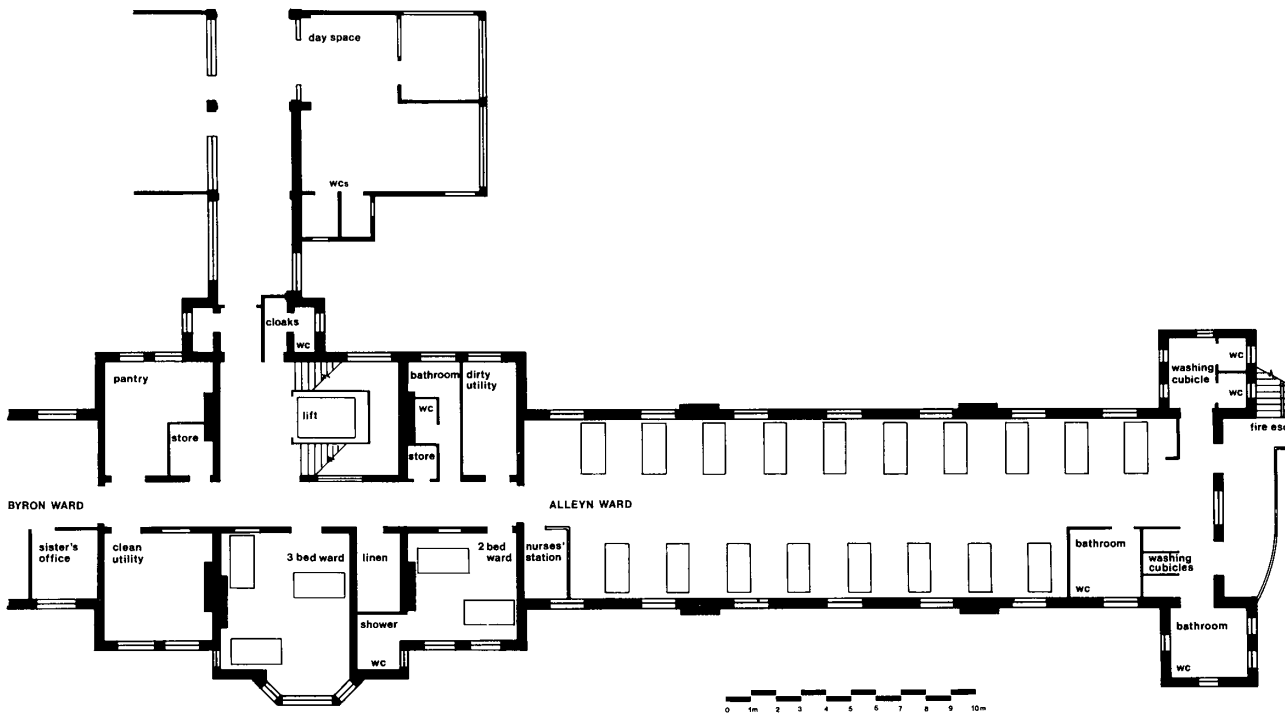
AFTER RENOVATION



BEFORE RENOVATION

DULWICH HOSPITAL

ALLEYN WARD



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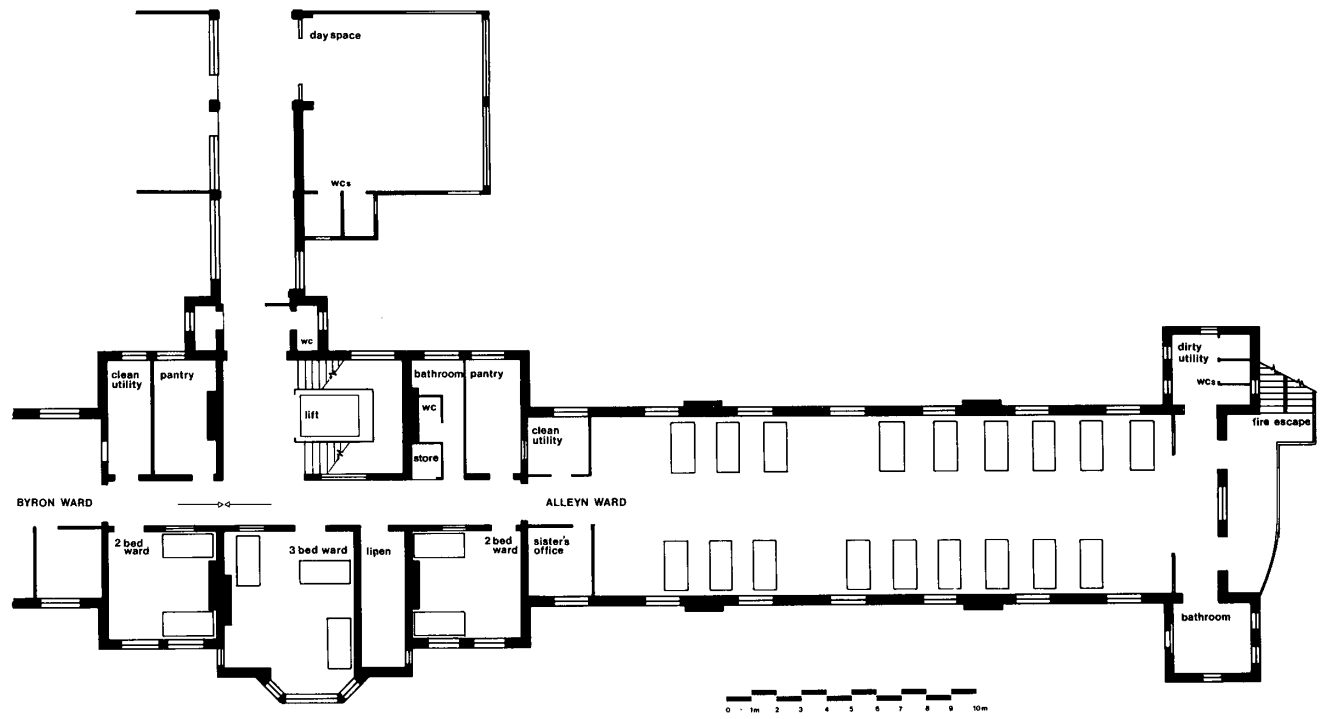
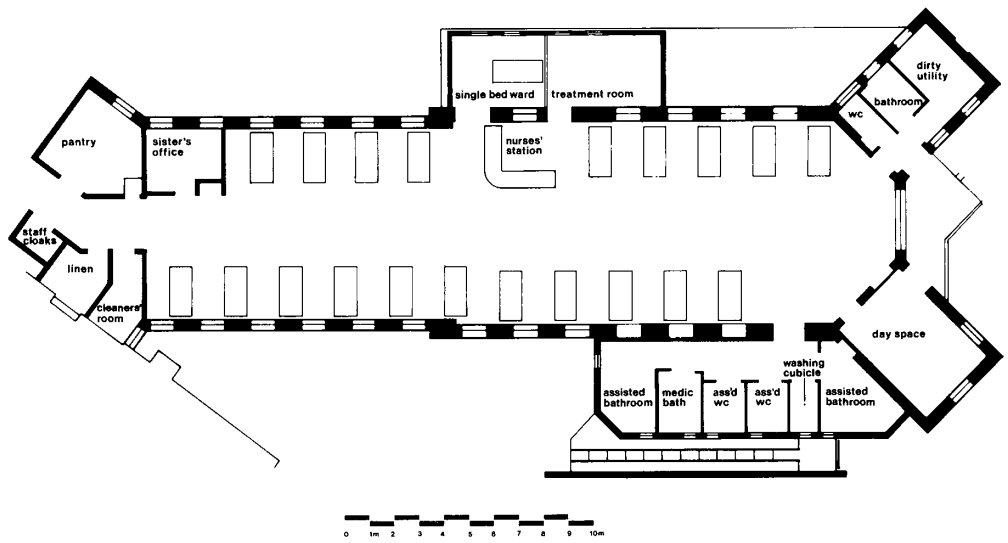


BEFORE RENOVATION

THE PRINCE OF WALES'S HOSPITAL

VICTORIA WARD

AFTER RENOVATION



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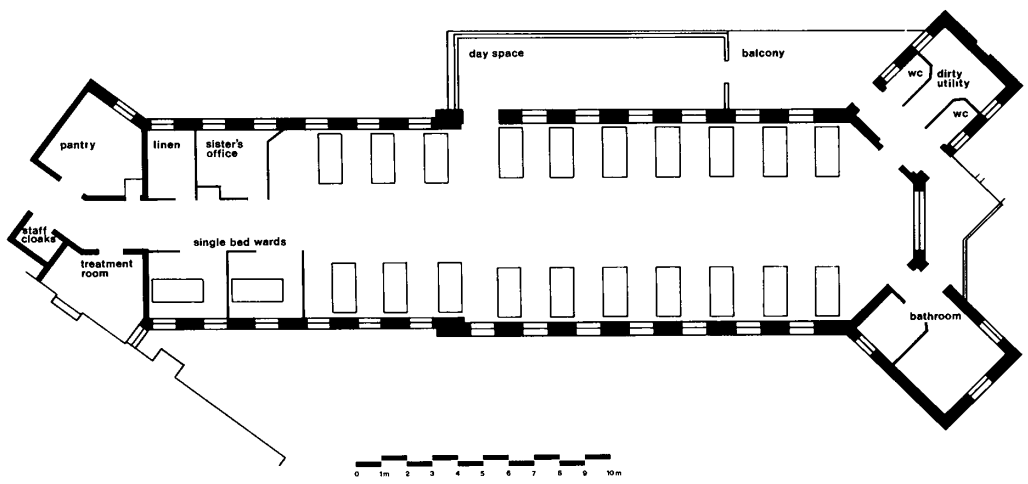
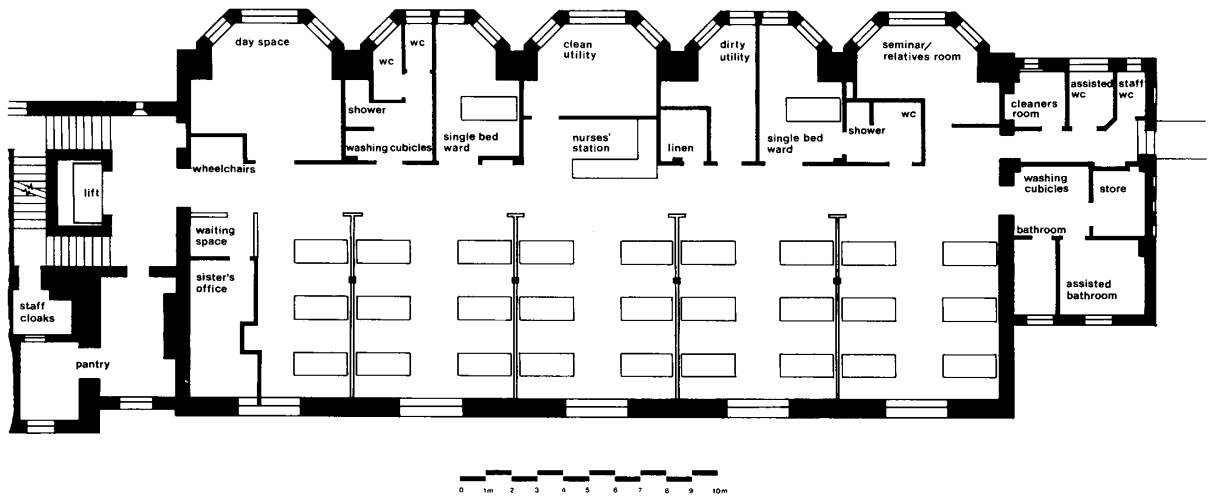


WHITTINGTON HOSPITAL

A10 WARD



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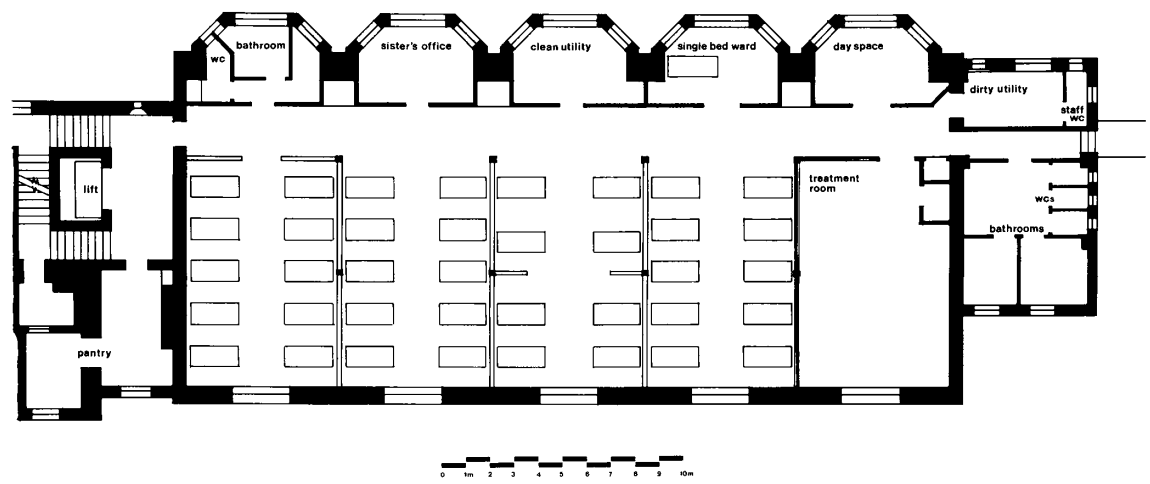
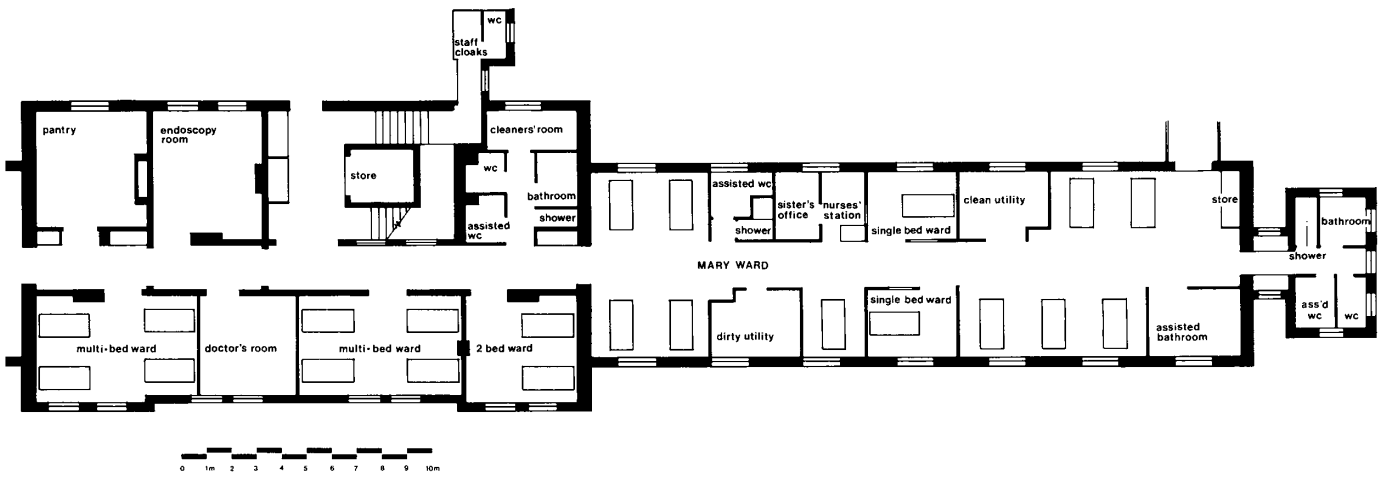


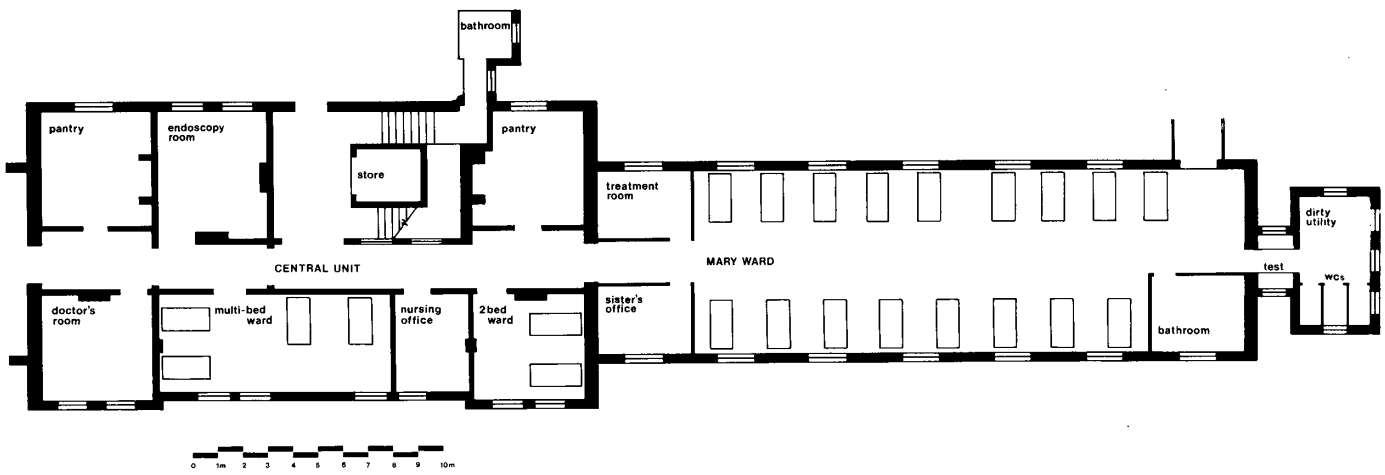
BEFORE RENOVATION

ST CHARLES' HOSPITAL

MARY WARD and CENTRAL UNIT



AFTER RENOVATION



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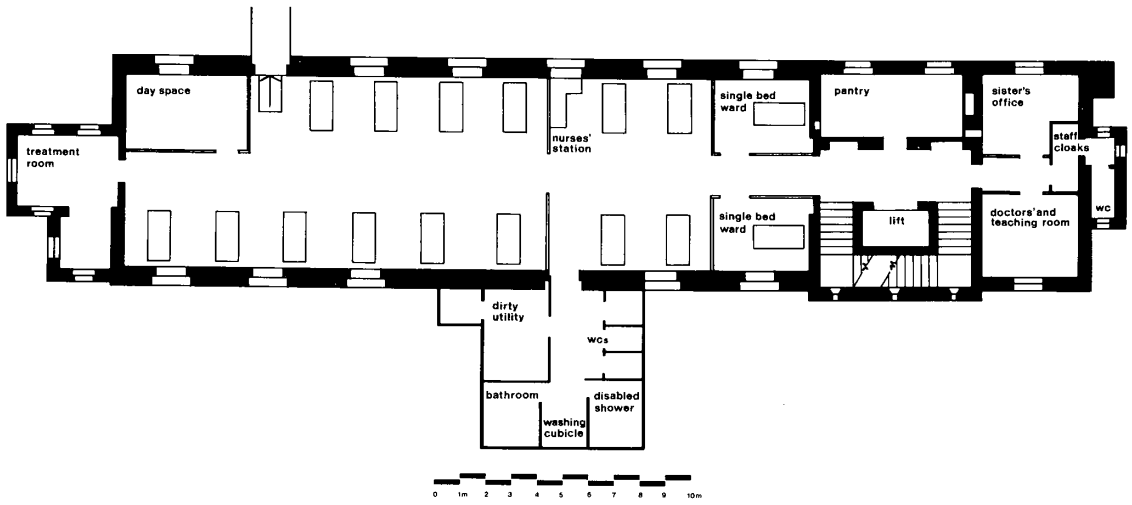
ST STEPHEN'S HOSPITAL

HANS SLOANE WARD



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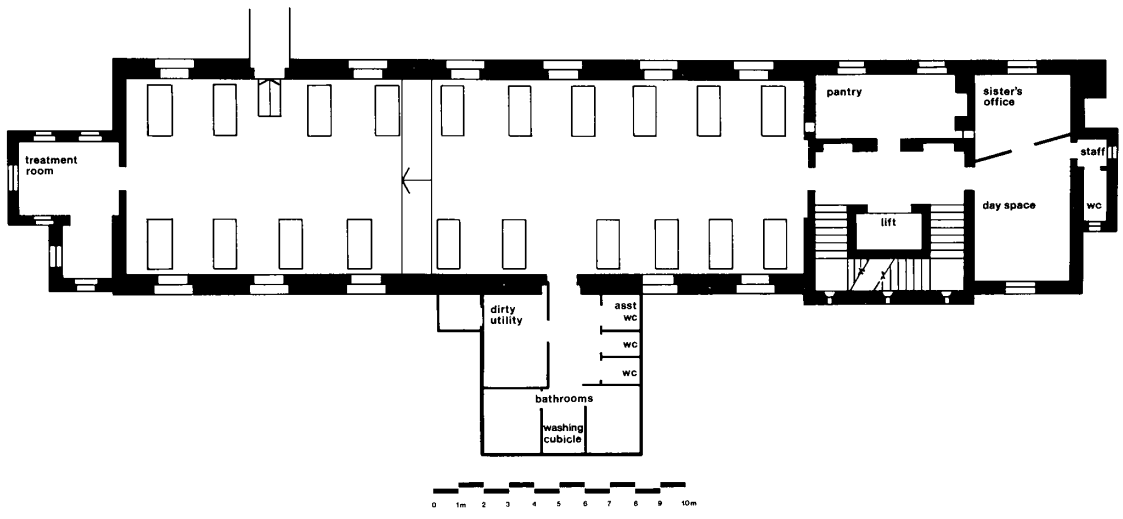
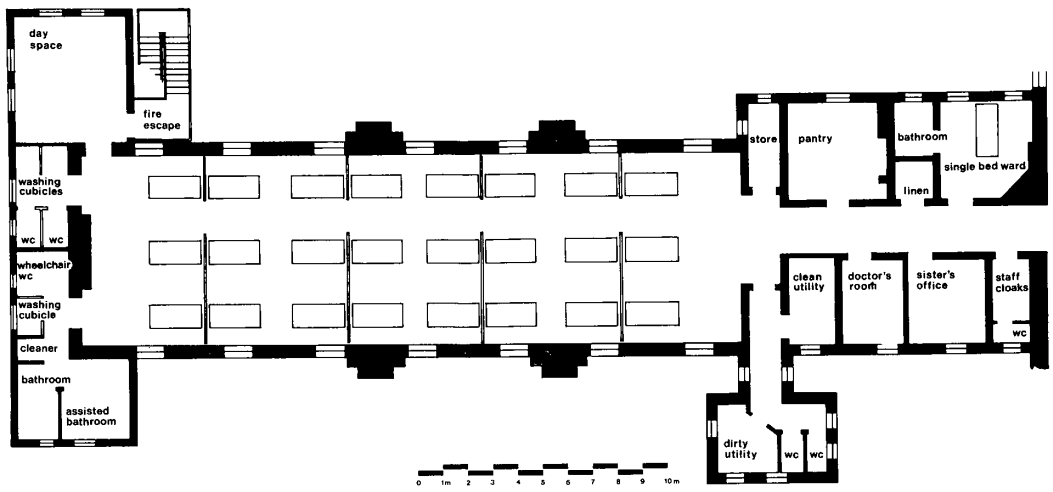


BEFORE RENOVATION

HAMMERSMITH HOSPITAL

C5 WARD



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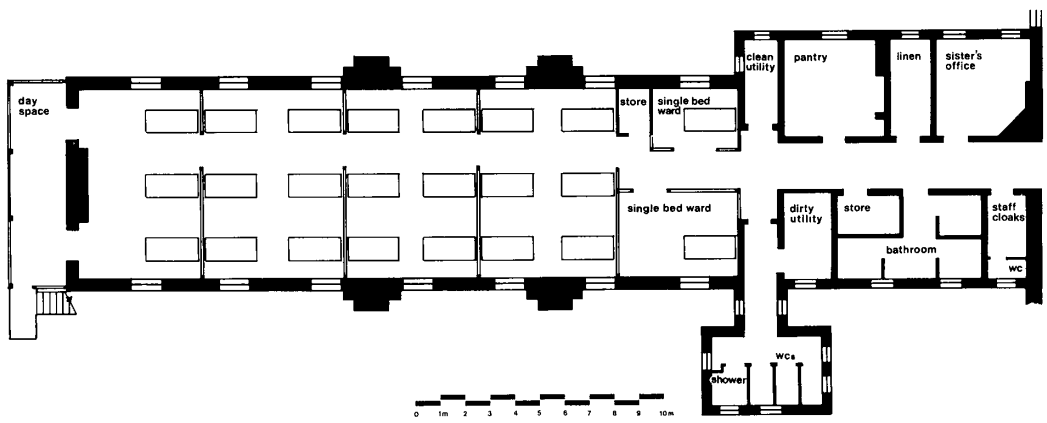
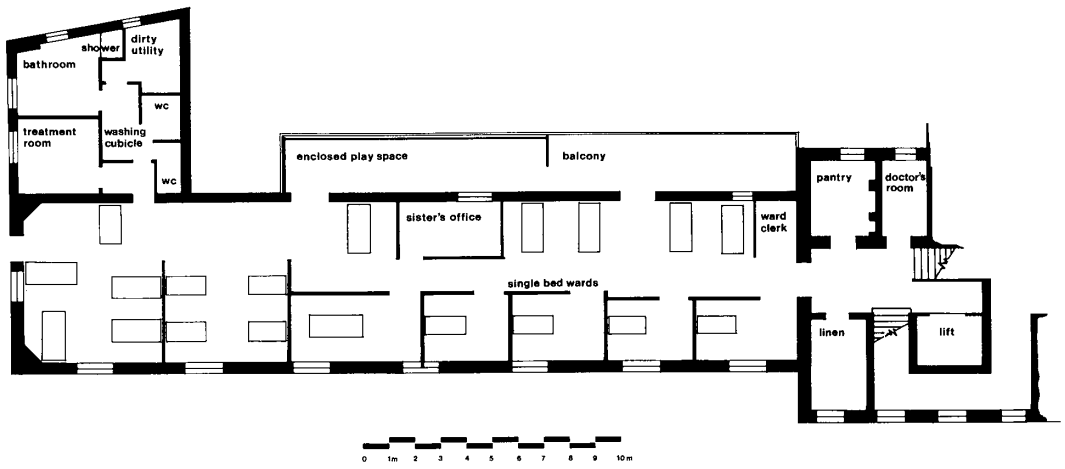


BEFORE RENOVATION

QUEEN ELIZABETH HOSPITAL for CHILDREN

CONNAUGHT WARD



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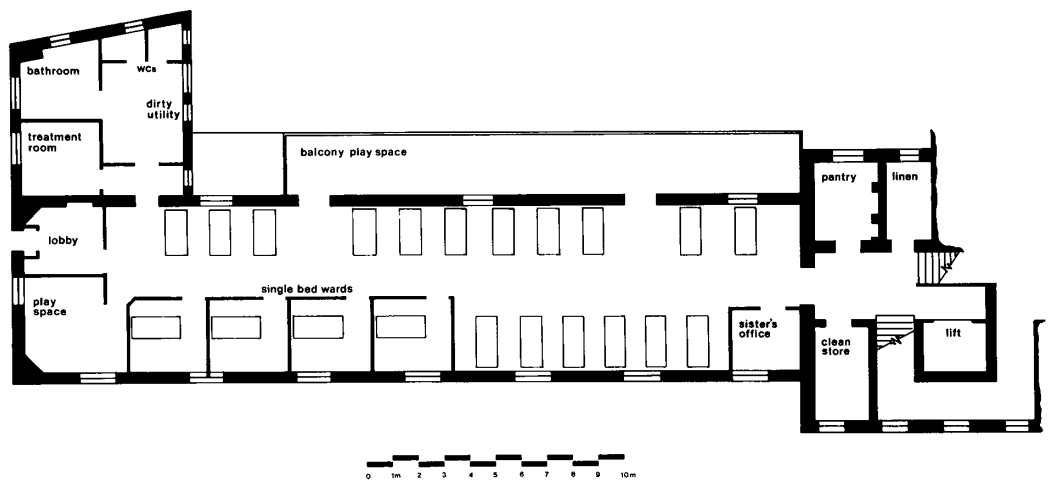
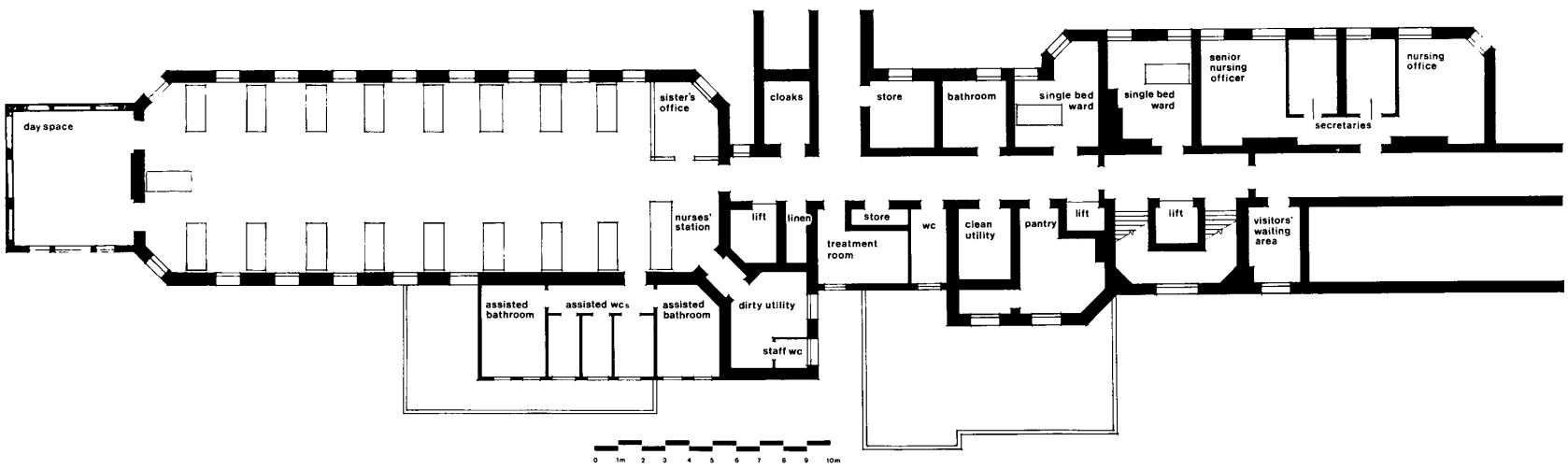


BEFORE RENOVATION

SOUTH LONDON HOSPITAL FOR WOMEN and CHILDREN

QUEEN MARY WARD



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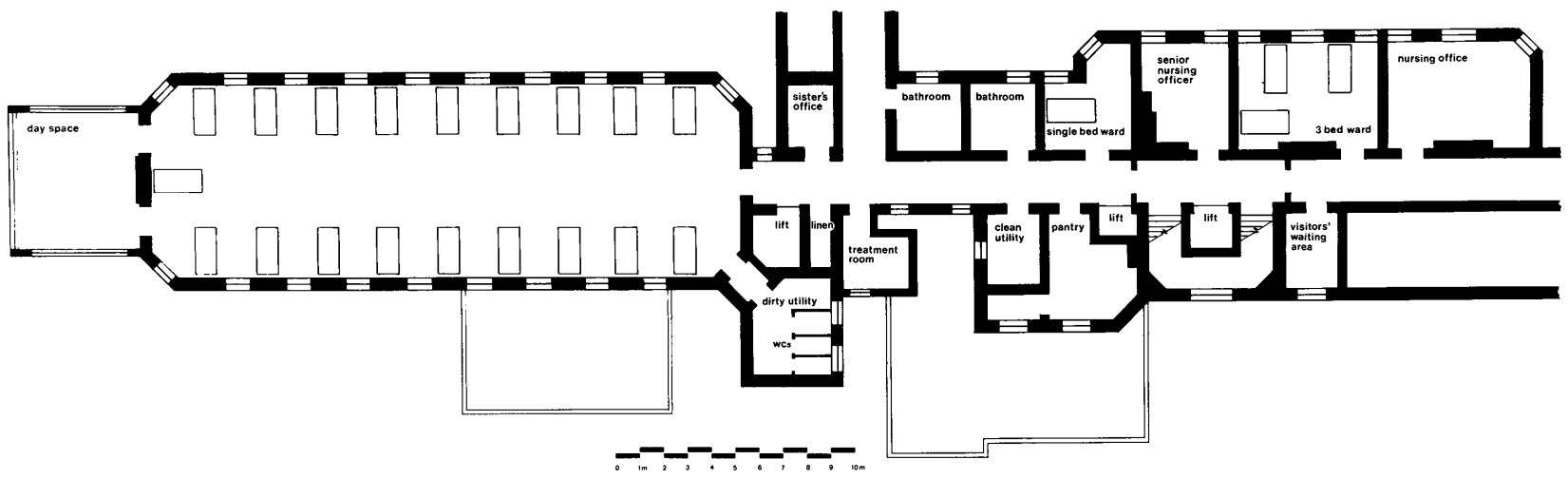
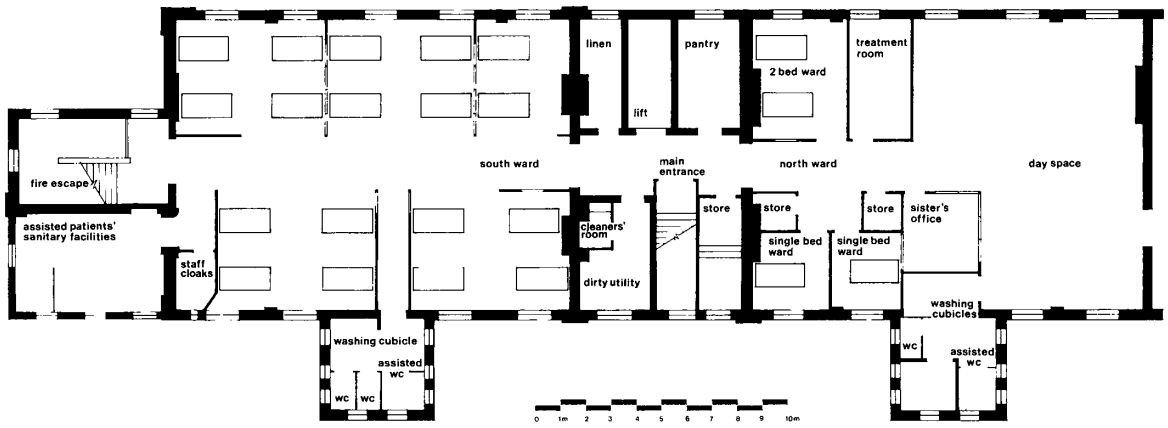


BEFORE RENOVATION

HACKNEY HOSPITAL

AVERY JONES WARD



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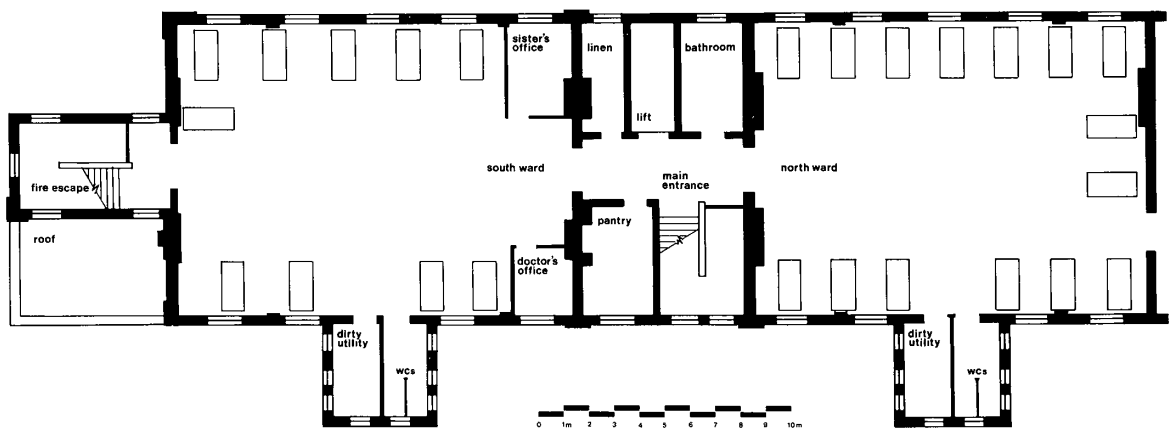

BEFORE RENOVATION