The Urological Unit at the Meath Hospital, Dublin

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REPRINTED FROM THE
BRITISH JOURNAL OF UROLOGY
(Vol. XXX, No. 3)
SEPTEMBER 1958

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AT the end of 1948 the Minister for Health agreed in principle to the construction of a new urological unit in the Meath Hospital. At this stage the new unit was to accommodate sixty patients. Later on, this figure was increased to eighty. The construction of the new urological unit was to give back to the general surgical hospital the forty beds at that time devoted to urology. During the first three months of 1949 the architect made a concentrated study of the working of the old unit. He followed the patient from his admission to his discharge. He saw every stage of his examination, clinical, radiographic, and cystoscopic. He followed him into the operating theatre and was present at standard open operative procedures as well as those performed transurethrally. He took note of the anæsthetist's work. He followed the patient back to the wards and watched the nurses at work. He went back to the theatre after operations to see what had to be done in cleaning up and preparing for the next day's work. He studied the record department. There was no phase of the hospital's work that went unobserved. He filled note-books with information gained. Finally, he studied such figures as the number of annual admissions, the number and nature of the operations performed, and the number and category of the various individuals responsible for the working of the department.

The original idea was to build a new nurses' home and to house the new urological unit in the old one. Fortunately, however, it was decided to proceed with the construction of the new nurses' home but to demolish the old one and to build the new unit on the site thus made available. This decision really became inevitable because the old nurses' home, a four-storey stone-faced block, defied all attempts at economical and suitable adaptation as a urological unit. Many futile plans had been made in an effort to make use of the old home, but once the decision to build from the ground had been reached the final plan very rapidly took shape. Like the Committee of Management of the Hospital, the Department of Health gave us a very free hand, making only two stipulations: first, that the sum allocated, £125,000, should not be exceeded, and secondly, that cross-ventilation should be provided wherever possible.

At this stage all new hospitals in Dublin were visited and the architect also made a short tour of the new hospitals in England, where he was made very welcome and gained much useful information. Anything such as floor coverings, items of furniture (including beds), and lighting fixtures which could be tested in the old department were tried out there during the early stages of the building of the new one.

The new unit is a T-shaped building. The top limb of the T is a four-storey (non-basement with the exception of a calorifier room), ferro-concrete building faced in brick. The ground floor houses the records, offices, and the out-patient department. The upper three floors accommodate the wards. The vertical limb of the T is of similar construction but is only one storey high. Within it are the two operating theatres, a large sterilising room, and surgeons', anæsthetists', and nurses' changing rooms. Nearby is the orderlies' changing room.

The ground floor of the four-storey building has in addition to the main entrance an ambulance entrance. The main entrance, which has double doors with a large doormat in the space between them, is situated near the centre of the front of the building. In the entrance hall is a porter's station, a combined almoner and general clerk's office, a public telephone, and toilet. The porter's station, which is constructed largely of glass, commands a view not only of the entrance, the main staircase, and the lift but also of two corridors which run east and west throughout the greater part of the length of this floor. The rooms opening off these

FIG. 1
View of front of Urological Department.

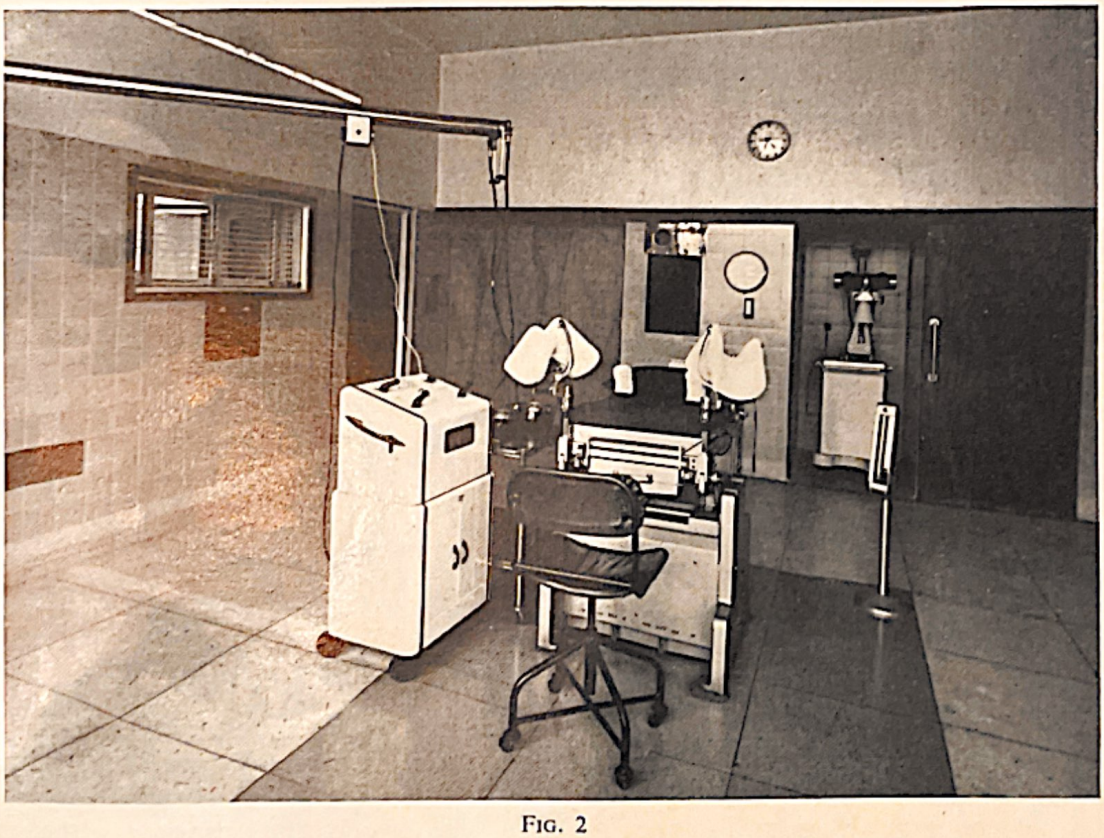

FIG. 2

Theatre No. 1. Transurethral theatre. Note the swinging arm carrying the water and isotonic solution delivery tubes and also the lighting lead and main lead to the diathermy machine. When not in use, the door on the right of the picture screens off the 200 mA. X-ray machine. The lower of the two clocks is a timer. A little above to the left of it is the loud-speaker enabling the radiographer to give instructions to the patient. Below this is the radiographer's observation window. Farther to the left is the very wide door through which trolleys pass to and from the theatre. To the left of this is the door leading in from the surgeons' scrub, which can be seen through the long window with its venetian blind enclosed between two layers of glass. The control for the venetian blind can be seen on the lower right-hand corner of the window. Below the window is the panel with its meters and controls for accumulator and transformer current for lighting the cystoscopic equipment. This view is from the big window which provides daylight lighting.

corridors are provided with small perforated number plates which jut into the corridor, enabling the porter to direct the traffic more easily.

The entrance hall is divided into two by a glass partition and swing doors which shut off the out-patient unit from the hospital proper. Off the out-patient portion of the entrance hall is a large room capable of holding thirty people which, in addition to serving as a general waiting-room, is equipped with projection apparatus, projection screen, blackboard, and two banks of X-ray viewing boxes enabling it to be used as a lecture room. Here, too, we hold our staff conferences. This room is known as the Chapman theatre because the money for its equipment was collected by Mr F. J. G. Chapman, Newtownbutler, Northern Ireland. A small laboratory, three consulting rooms, a small private patients' waiting-room, a radiographic-cystoscopic theatre, and a large treatment room complete this part of the unit. Adjoining the *main cystoscopic room* is a film-processing and drying room. This room is equipped with a Liebel-Flarsheim hand-operated H. H. Young combined cystoscopic and X-ray couch. The table is fitted with a Potter-Bucky grid and films can be made in the vertical position. Sterile water is supplied over the table by a ceiling pendant. The radiographic unit is 100 mA. portable X-ray plant made by Messrs Watson, London. In addition to serving this room it can be used in the wards and in the main operating theatre when necessary.

The *treatment room* can be divided by a central curtain if required, forming two treatment or diagnostic areas, each area being served by one through-way dressing cubicle (similar cubicles feed the cystoscopic room). A ceiling pendant again supplies sterile water. In both the cystoscopic room and in this room 50 amp. plugs are provided. A multi-purpose trolley is part of the equipment of this room. It is used for a multiplicity of purposes, including the collection of specimens of blood and urine, etc., dilatation of strictures, minor urological operations, and so on. The overhead sterilised water supply and the multi-purpose trolley enable it to be used with complete satisfaction for cystoscopy. The 100 mA. portable X-ray machine can be wheeled in here and at a pinch, with the aid of a Leishman grid, it can be used for the simpler types of radiographic work. Both rooms are interconnected with a sterilising-cum-work room which also serves as a nurses' station for the cubicles and consulting room. The sterile water to both rooms comes from two sterilisers situated in a special little compartment on the first floor.

Only local anæsthesia is used in the out-patient department.

The small laboratory referred to serves the whole unit. There are two refrigerators in it; one functions as a blood bank and the other, which served this purpose since 1938, is now used for specimens. A W.C. adjoins the laboratory and a pass-through hatch from it enables male patients to hand in their specimens to the laboratory technician in complete privacy. They communicate with the technician by a buzzer. The laboratory is equipped for all ordinary requirements of simple clinical pathology. The bacteriological, biochemical, and main pathological work of the unit is carried out in the laboratories of the medical school of Trinity College, Dublin.

Directly opposite the lift, close to the porter's station, is a very wide sliding door giving entrance to the corridor leading straight down to the vestibule which gives access to the theatres. This door is opened only to allow the passage of patients on trolleys from the wards on their way to the operating theatres. At all other times it is kept closed. Farther down the corridor there is a narrower sliding door which opens into the sterilising room. This is a very large room with tiled walls and terrazzo floor. There is a conveniently situated built-in table for preparing dressings, operating wear, packing drums, and so on. A work-bench runs along the walls of this room not occupied by the built-in sterilisers. In one of these benches is fitted a stainless-steel sink. An electrically driven machine for washing syringes is conveniently housed on a small bench with a waterproof top. Above these benches are fitted built-in cabinets with glass-sliding doors providing very ample storage accommodation. The sterilisers are built in behind a stainless-steel panel. In addition to a hot-air steriliser there is a manually operated rectangular

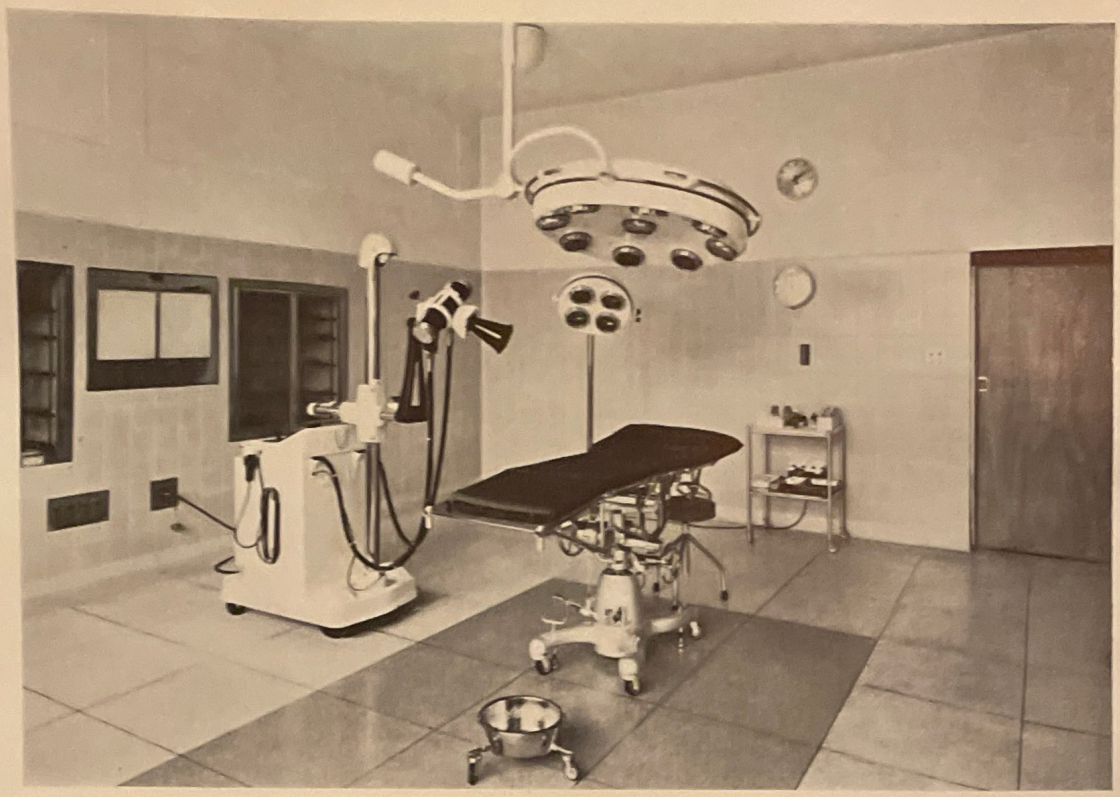

FIG. 3

Theatre No. 2. Open operating theatre. This view is again taken with the camera in front of the big window which forms the southern wall of the theatre. On the right-hand corner is the big door through which trolleys pass. To the right (not shown in the picture) is a door and window similar to those shown in picture of Theatre No. 1. The view shows the portable 100 mA. X-ray plant arranged for X-ray of kidney during operation.

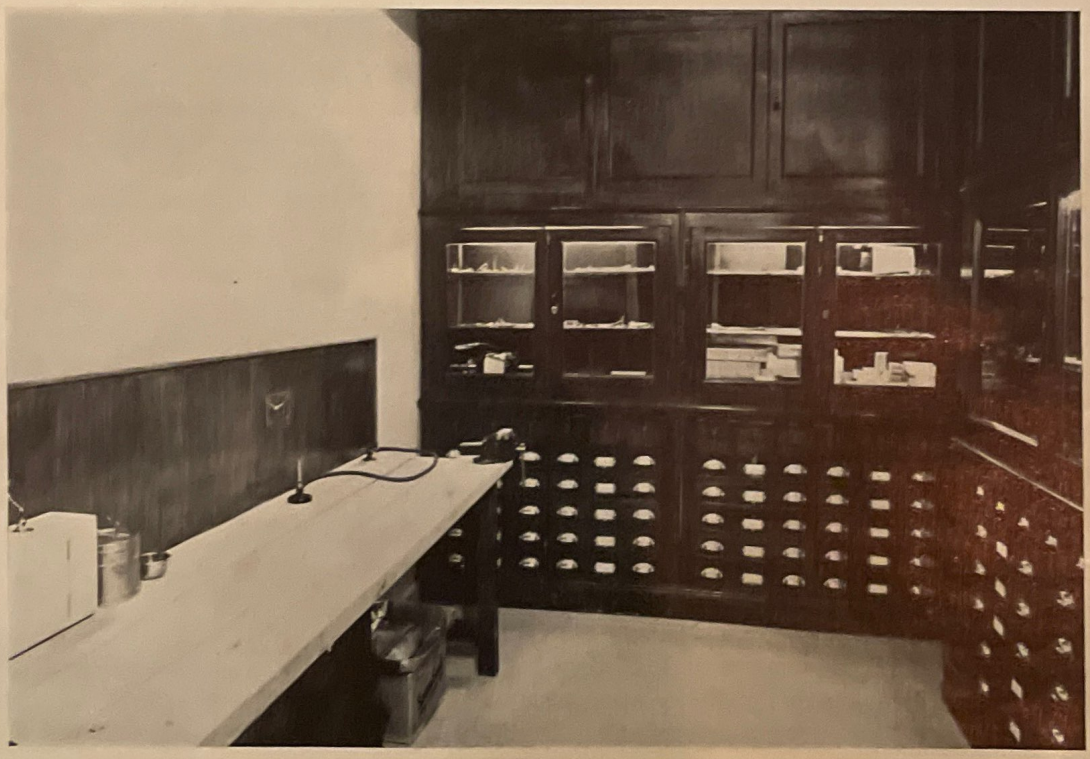

FIG. 4

The combined instrument store and workshop and servicing room. It is situated on the passage leading to the theatres.

high-pressure steam steriliser to which is fitted a recording thermometer. These sterilisers, while their doors and controls are fitted to the stainless-steel panel just referred to, are actually housed in a small room off the sterilising room. Access to this room is by a door which is always kept locked and the key of which is in the possession of the Theatre Sister. A short passage leads from the sterilising room to the main passage leading to the theatres. On this passage is the door leading to " the nurses' change "—a room which functions in the afternoon as the Theatre Sister's office. This passageway is the one used by the staff on their way to and from the theatres. On the main passageway to the theatre is the anæsthetists and assistants' changing room on the one side and on the other is a very small room for housing the emergency lighting; a larger room which functions as a workshop and instrument and appliance store; a small sound-proof recess for the telephone and " the surgeons' change." All four changing rooms are provided with toilets, showers, and cabinets for clothes. In the surgeons' change there is a built-in bookcase, X-ray viewing box, and cupboards for operating clothes. There is, in addition, in both the anæsthetists' and surgeons' changes, a combined boot box and seat.

The workshop has a long bench. In addition to plugs for electric power, gas is also laid on. An electric grinder and polisher is available and a good selection of ordinary mechanic's tools including an electric soldering iron. The minor running repairs are done by a skilled mechanic who comes once a week. On two sides of this room are shop-type instrument cabinets, the interiors of which are electrically illuminated and the shelves of which are of plate glass. Below these cabinets the entire space is taken up with nests of drawers. The space above the cabinets is taken up with ordinary cupboards.

This main passageway can be shut off from the lobby by a full-width sliding door. The slide on which this door moves provides a broad black line sharply separating the corridor from the theatre lobby. While the theatres are in use it is against the rules for anybody who has not changed into theatre clothing and footwear and who is not masked to cross this line.

Just before the door is reached there is a heated double cupboard. The two units of this cupboard are completely separated from each other. Each has its own door. When the patient on his trolley reaches this spot, his ward blankets are removed and put in one cupboard and he is immediately covered with heavy turkish towelling from the other cupboard.

The lobby (which is top-lit and clerestory-ventilated) itself gives direct access to the cystoscopic theatre and its attendant dark room, " the surgeons' scrub," the general theatre, the anæsthetic-cum-all-purpose theatre or recovery room, and a sluice room. The layout of this section of the theatre suite is standard, twin theatres interconnected by the surgeons' scrub and sub-sterilising room, but the details and equipment are somewhat different.

The cystoscopic operating theatre (which we call T1) presented many problems. Its first purpose was to provide the best equipment we could afford, arranged to the best advantage for transurethral surgery. In addition it was to be equipped with an X-ray apparatus capable of making retrograde pyelograms on the anæsthetised patient and to give clear pictures of the bladder immediately after litholapaxy. Transurethral surgery would ordinarily end at lunch-time and the room was planned to serve as a diagnostic X-ray room in the afternoons. This was done in order to relieve the main X-ray department of the hospital a little of the ever-increasing demands made on it for pyelography. Another reason for using the room for afternoon radiography was to make the fullest use possible of the expensive and efficient machinery available. A Liebel-Flarsheim motorised H. H. Young combined cystoscopic and X-ray couch was decided on. This is the same table as that installed in the main out-patients' cystoscopic theatre except that it is motorised. It has proved very efficient and very convenient both for cystoscopic operating and for radiography. It is extremely useful for the transurethral operator to be able to control the height and angle of the table with his feet. Vertical radiography, too, can be simply and effortlessly carried out.

The type and location of the X-ray apparatus to be used in this room—the first function of which was transurethral surgery—provided a specially difficult problem. Very many different

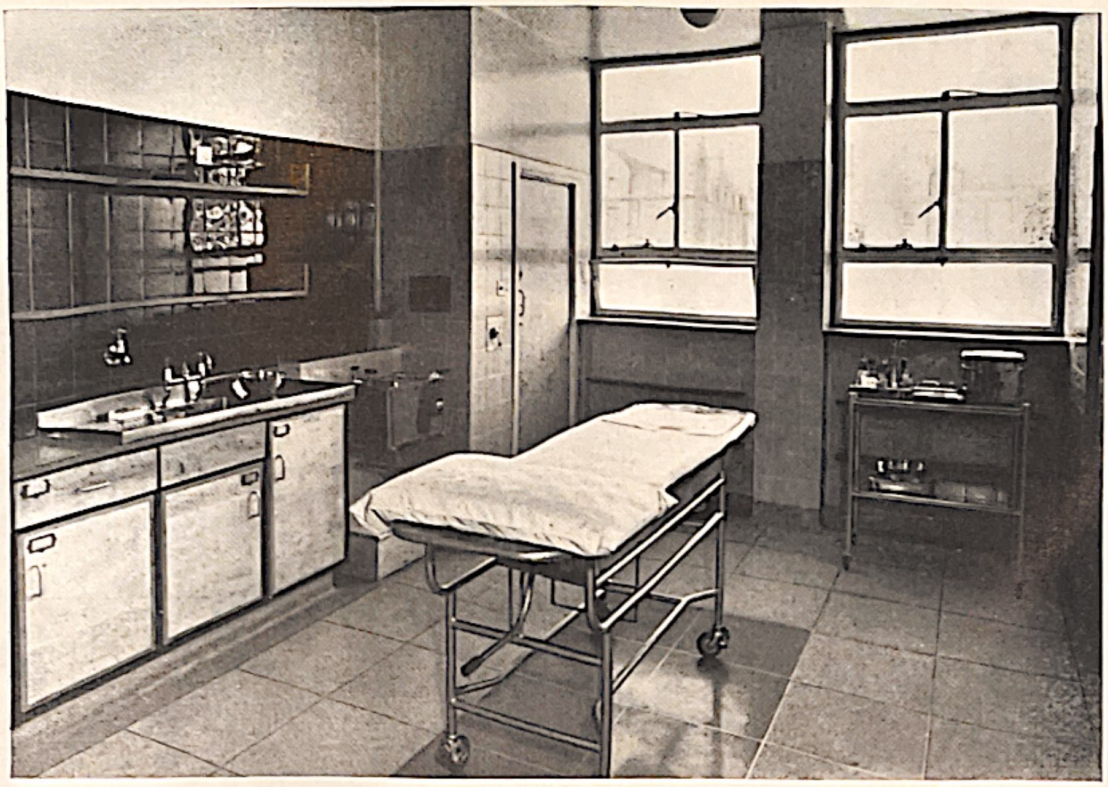

FIG. 5
A treatment room.

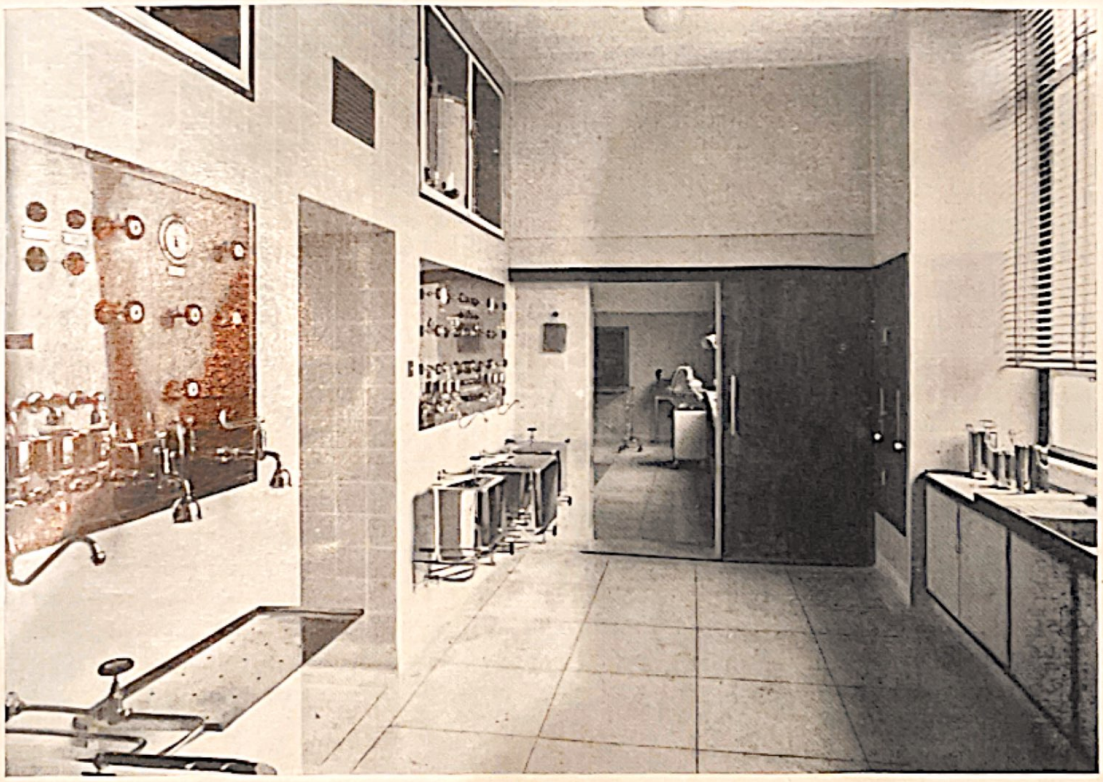

FIG. 6
The sterilising room serving Theatres' Nos. 1 and 2. The sliding door shown is that opening into Theatre No. 1. The opening on the wall on the right (closed off by a door not shown) gives access to the surgeons' scrub.

solutions were discussed and rejected before deciding on a 200 mA. portable X-ray outfit. Messrs Watson, London, finally built a mobile combined transformer and tube stand which, when not in use, is stored in a recess closed off by a sliding door. The controls for this unit are housed in a recess outside the theatre, close to which is an observation window and a housing for a microphone and amplifier for communication to the theatre from the outside if required. When in use, the mobile unit is connected by armoured cables to two alternative socket outlets set behind stainless-steel covers. In the same wall as the recess which houses the transformer unit is a cassette passbox which gives direct access from the theatre to a small dark room equipped for immediate film processing, viewing, and drying.

Yet another problem in this theatre was how to provide the necessary sterile water or isotonic solutions to the patient in a manner which interfered least with the surgeon, assistants, and staff, which would not obstruct the orbit of a theatre lamp or the passage of an X-ray tube stand and which, if required, would allow the pressure of water or isotonic solution discharged to be varied and its flow regulated. In the end we decided for simplicity and for the minimal risk of breakdown. It was decided to use fixed level tanks with a swivel arm supply which would swing over the surgeon's end of the table and discharge water or isotonic solution at a known pressure. We retained the method which we had been using for some years in the old department of using what we call " chokes." Chokes are little metal cylinders a little over an inch in length, through which an axial hole has been bored. We employ three, diameter holes $\frac{3}{16}$, $\frac{1}{8}$ and $\frac{1}{16}$ in. A choke is inserted into the rubber tubing leading down from the swivel arm to the operating table. By their means, while the pressure remains constant, the rate of flow can be adjusted from 1 litre per minute to 1 litre per twenty-four minutes. This arrangement enables the water or isotonic solution to be fed directly into the cystoscope with the least possible risk of contamination. We have used a simplified version of this system for nearly twenty years without an accident of any sort.

Again, simplicity, the minimising of the risk of failure, and, of course, the matter of cost, made us decide against " built in " diathermy, pipe supplies of gases, and laid-on suction.

Three alternative means of electric supply are provided in the theatre—mains, " Keepalite " emergency system, and battery, both accumulator and dry. Two separate phases of main supply are available; in the event of one failing, the other can be tapped rapidly. A wall panel complete with the necessary meters is provided for the distribution of transformer controlled mains current and also for accumulator current for the lighting of instruments.

The swivel arm carries the supply leads from the mains for the diathermy machine and also the leads from the transformers for lighting endoscopic equipment, thus eliminating trailing these connections across the floor.

The main diathermy machine is the " Bovie " made by Liebel-Flarsheim. It is used for all loop resections. For securing hæmostasis during punch resections we use the Genito-Urinary Manufacturing Company's spark-gap machine. Though twenty-five years old it is still giving complete satisfaction. For suction during punch resections we have a motor and pump made by Mr Blease, housed in a sound-proofed cabinet on wheels. On top of this cabinet are two large vacuum bottles with a change-over valve as used by Mr T. L. Chapman, Glasgow.

To revert to the swivel arm, its supply tubes are sterilised by blowing steam under pressure through them by means of detachable hoses through special exit tubes fitted in the outside wall of the theatre. Supplies are piped to the arm from two 15 gal. pressure sterilisers—one for water, one for isotonic glucose. The tanks are equipped with cooling coils, thermostatic cut-outs, and variable temperature thermostatic control units and are housed in glazed cabinets in the sub-sterilising room over their respective control panels. There are also direct draw-off taps on these panels from each tank in the sub-sterilising room. Also in this room in glazed cabinets are two further 15 gal. tanks, one for saline and one for sterile water. These are piped direct to the general operating theatre as well as having draw-off taps in their control panel.

Maximum use of natural lighting and ventilation in both theatres was thought to be the best

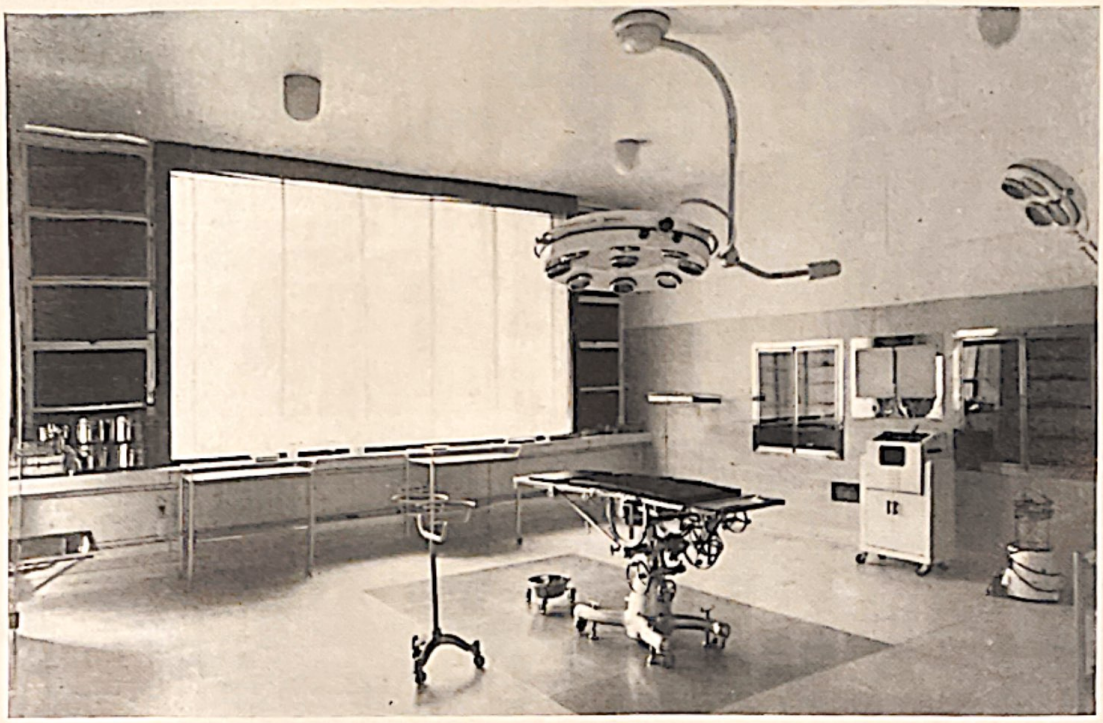

FIG. 7
Another view of Theatre No. 2, showing the large window (see text).

FIG. 8
Room known as *Theatre* No. 3. Can function as an anæsthetic or recovery room or as an additonal cystoscopic or operating room. Note the multi-purpose trolley and the specially designed tank for cystoscopy. Both can be wheeled to any part of the Department.

alternative to a full air-conditioning and purifying scheme which was prohibitively expensive to install and very costly to maintain. The large windows in these theatres (which of necessity face south) are double-glazed with heated air space between. Light is satisfactorily controlled or eliminated by a blackout blind worked separately or in conjunction with a venetian blind, both housed in the air space of the double window and both manipulated from the theatre with a simple remote-control arrangement. Ventilation is natural, implemented by a mechanical exhaust system with extract outlets at floor and ceiling level for removing gas and vitiated air. This extract is used only with open-window ventilation between operations.

The *sub-sterilising room* interconnects the cystoscopic and general theatres and is accessible via the surgeons' scrub. It contains (besides the tanks and equipment mentioned above) two open boiling-type utensil sterilisers and one instrument steriliser, jacketed and thermostatically controlled, two built-in formalin sterilisers for catheters, and a blanket-warming cupboard, stainless-steel sink, worktop, and storage cupboards.

The *surgeons' scrub* comprises four scrub units of filled armour-plate glass with terrazzo trough beneath. Double-glazed observation windows look into the theatre from the scrub position and a venetian blind set in the air space (remote controlled from the theatre side) gives shade and privacy as required. Gown and linen cupboards are provided in this room. The storage batteries supplying the cystoscopic theatre complete with a trickle charger are also located in this room.

The *general operating theatre* is known to the staff as T2.

The operating table is the Meath Hospital Urological Operating Table supplied by Messrs Down Bros. many years ago and reconditioned by them. The operating lamp is the Hanovia Hanau. A four-light portable Hanovia lamp is also available. A Blease-engined cabinet, silenced suction apparatus fitted with a pressure gauge, and an A.C.M.I. diathermy machine complete the floor equipment. On the end wall of the theatre is a 50 amp. mains plug. If X-ray control is needed during operation for renal stone, the 100 mA. portable X-ray machine is wheeled in from the out-patient cystoscopic theatre and has proved most useful and convenient. The 50 amp. plug is for feeding the X-ray machine.

Both theatres are provided with electric clocks and electric operation timers. Both theatres, too, are fitted with X-ray viewing boxes and built-in stainless-steel glass-shelved instrument cupboards.

The *anæsthetic room* is known as T3. It is very seldom used as an anæsthetic room but is in constant use for cystoscopic work and as an accessory theatre, the work being done on a specially designed trolley-cum-operating table-cum-cystoscopic couch. Several of these trolleys are in use throughout the department. They were built by Messrs Fannin, Dublin. This room is very useful every now and then as a recovery room for the bad-risk case. It has a utility alcove opening off it with a sink and is provided with storage cupboards for cylinders and other anæsthetic equipment.

The *sluice room* opens off the theatre lobby as close as is feasible to the theatre. In addition to the usual sanitary fittings it has glass shelves and cupboards for storing specimens.

PATIENT ACCOMMODATION AND GENERAL LAYOUT

First Floor (Male). Total, 27 beds.
Three 6-bed and one 4-bed ward (22 beds).
One post-operative recovery ward.
One single-bed ward (1 bed).
One treatment room.
One day room.
Sluice rooms, ward kitchen, and other ancillaries.
Office of Sister-in-Charge.

FIG. 9

General view of one of the six-bed units of which there are six.

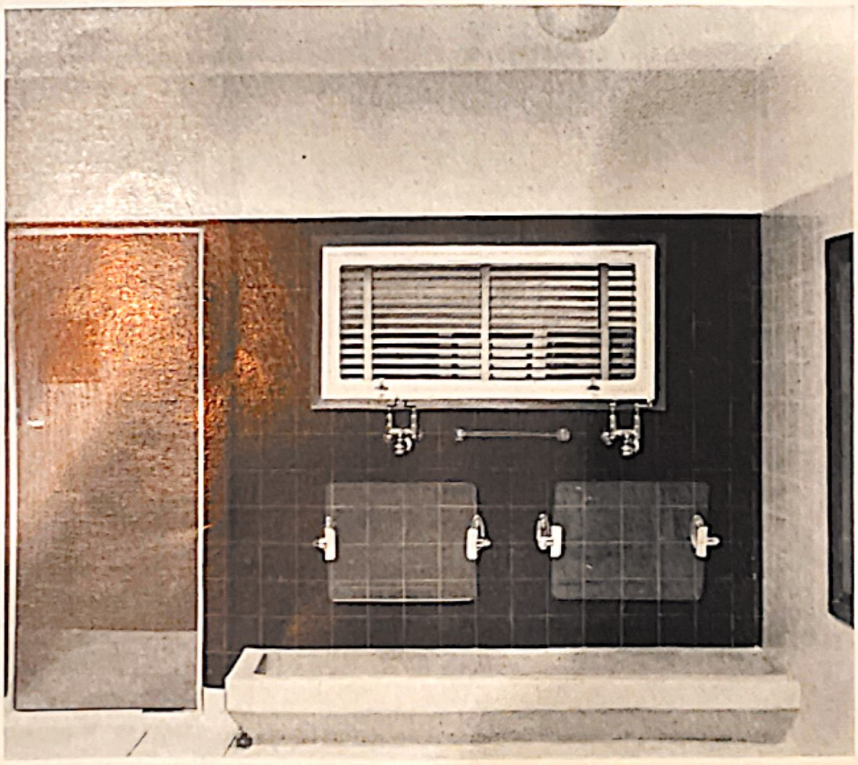

FIG. 10

Left-hand view of surgeons' scrub. The window with the venetian blind looks into Theatre No. 1 to which the door on the left opens. The doors on the right give access for servicing the sterilising equipment. There is an exactly similar arrangement at the other side of this room for Theatre No. 2.

Second Floor (Male, Female, Children). Total, 33 beds.
Three 6-bed (male) (18 beds).
Two 4-bed (female) (8 beds).
One 6-bed (children) (6 beds).
One single ward (1 bed).
One day room (male).
One treatment room.
Sluice room, ward kitchen, and other ancillaries as on first floor.

Third Floor (Private). Total, 22 beds.
Nine 1-bed wards (9 beds).
Three 2-bed wards (6 beds).
One 4-bed ward (4 beds).
One 3-bed ward (3 beds).
Sluice rooms, ward kitchen, and other ancillaries.

Roof.
Terrace with bed-lift and stair access.

Basic Dimensions.—The building consists of a reinforced concrete frame with a floor-to-ceiling height of 9 ft. 6 in. throughout, with the exception of the main operating theatres, where this dimension is 12 ft. 10 in. A column spacing or grid of 10 ft. was chosen as being the minimum dimension (centre to centre) suitable for the width of a single room. Twelve feet would have been better in all respects, but in this case there was neither space nor money to use it and, all things considered, the 10 ft. grid has worked quite well, giving fifteen and a quarter bays in the length of the unit, *i.e.*, 157 ft. 6 in. by a width which varies from 30 to 40 ft. approximately.

Circulation.—The fulcrum of the circulation plan on each floor is the central "control" area directly accessible from main entrance, main stairs, and bed-lift. On the ground floor the porter's desk is the heart of the "control." On the first and second floors the nurses' station is the "control" heart supervising access to wards, from main stairs and lift as well as the corridor to the various ancillary rooms. In addition, on both these floors the nurses' station has direct supervision over three six-bed wards as well as over the post-operative (four-bed) and children's (six-bed) wards. On the third (private) floor the nurses' station again controls access from stairs and lift and supervises directly one three-bed post-operative ward and one single-bed ward.

Wards.—In the ward units every effort was made to reduce the distances walked by nurses, and in this respect the nurses' station on each floor is within 60 ft. of all ward doors (with one single-bed exception). With regard to sluice rooms, this distance, in all cases, is less than 40 ft.

All wards (with the exception of three two-bed wards) have a southerly aspect and take advantage of the remaining trees and open space in the hospital grounds as well as (on the upper floors) a fine roof-top view of the Dublin mountains. Windows in all cases stretch from wall to wall, and (in the case of the six-bed wards) from ceiling to floor. Window-cleaning access and shade are provided by overhangs at ceiling level and glare and privacy are controlled by venetian blinds. Despite the large windows even without blinds there is remarkably little glare, thanks to the wall-to-wall windows which also give considerable impression of space to the minimum dimensions used in the unit.

On the first and second floors, as mentioned above, the nurses' station supervises a group of three six-bed wards; these wards, in fact, form two self-contained eighteen-bed wards, each of which has its own day room, built-in lockers, lavatories, bathroom, and sluice room.

Both wards are intended for male public patients who are often ambulatory, but in many cases on closed catheter drainage and are, by this arrangement, afforded privacy and comfort

which would not be possible with the ordinary ward and corridor arrangement. These wards are cross-ventilated and lighted and are, as has been mentioned, subdivided into groups of three, each with six beds, the division being effected by glazed partitions which run from floor to ceiling. Another glazed partition, in this case about 7 ft. high, runs at right angles to form

FIG. 11

View from Theatre 3 of the vestibule to Theatres Nos. 1 and 2. The small door at the end leads to the dark-room. To the right is the X-ray control trolley. The two wide sliding doors on the right open into the two theatres. Between them, but not showing, is the swinging door leading to the surgeons' scrub. The small door on the left-hand side closes off the sluice room and the wide sliding door beyond it closes the inner end of the passage leading into the theatres.

a sort of doorless corridor in the ward itself, giving privacy without restricting cross-ventilation or light. On the outside north wall of this corridor are patients' built-in clothes lockers which are independently heated and ventilated. Each bed is provided with curtains hung on a patent silent track to give individual privacy. The single-bed wards are provided with wash-hand basins, built-in wardrobe and cupboard, and a built-in dressing-table.

Ward Ancillaries.—The ward ancillaries were by reason of space and economy limited in scope and area. They comprise :—

1. *The Recovery Room.*—Perhaps the most important room is the recovery room, named after an old friend, the Thompson room. It is situated on the first floor. It has no beds of its

own but is capable of holding four beds. A large window in the nurses' station looks into it. Its only furnishings are two sets of oxygen cylinders complete with suction apparatus, three stands for holding glucose and blood bottles, a simple water steriliser, and a wash-basin. Four male patients needing special care during the first post-operative day are nursed in their own beds in this room. The Sister-in-charge of the unit has her office just one door away, and her most senior colleague is in charge of this floor. We would not be without this room for anything.

2. *Main Utility and Sluice Room and a Sub-utility Room.*—The former was an attempt to provide for "clean" and "dirty" sluice in a single room. The "dirty" section contains a mackintosh slab and sink, a cupboard for mackintoshes, slop hopper with jets, a bedpan washer, bedpan and bottle racks, and a ventilated specimen cupboard. This section opens on to a balcony used for foul and waste bins, mackintosh airing, cloth-drying, etc. The "clean" section of the sluice is partially separated from the "dirty" by a glazed screen. It contains a stainless-steel sink, a large utensil steriliser, cupboards, shelves, and heated towel rail. It was also planned as a workroom in relation to the treatment room which opens into it.

3. *The Treatment Room* was planned so that both ambulatory and bed patients could be treated in privacy and with facilities away from their wards, in particular, of course, the public and semi-private wards. It contains a long work-bench with built-in scrub-cum-sink, and an instrument steriliser, also built-in X-ray viewing boxes, a 50 amp. plug for 100 mA. mobile X-ray unit, and racks for bottles, etc. A W.C. opens directly off the room for treatment purposes. The all-purpose trolley table designed for the unit completes the equipment of this room which has justified its inclusion in every way.

4. *A Linen Room* is provided to accommodate the linen required for each floor with the usual slotted shelves and a sorting table with iron plug. The hot-water system provides year-round warmth, and the room being internal has mechanical extract ventilation.

6. *The Ward Kitchens* on each floor are served by an automatic food lift from a ground pantry which serves as a distribution centre for the bulk of the food which comes in insulated trolleys from the main hospital kitchens. Each kitchen is equipped with a stainless-steel sink, heated towel rails, work counters and cupboards, wall presses for utensils and food, an industrial-type electric cooker for occasional use, and water boiler, the latter being grouped under a steam hood with mechanical extract ventilation.

7. *The Nurses' Stations* are centrally placed as described. Glazed panels in the stations give 360 degrees supervision and venetian blinds give privacy or shade as required. Each station has a work counter and desk with built-in cupboard and drawers and a small medicine sink; also a poison cupboard with warning light and nurses' call light and buzzer.

8. *The Day Rooms*, with their little balconies and the *flat roof* to which the lift will bring a patient in his bed, have proved their worth in every way, physical and psychological.

9. *Patients' Toilet Accommodation* consists of two bathrooms and five W.C.'s and two small washrooms for each ward unit, average thirty beds.

Heating and Hot-water Systems.—Heating is effected by a mechanically circulated low-pressure, hot-water, embedded floor-panel system giving a maximum floor surface temperature of 70° F. This method of heating eliminates radiators and exposed piping of any kind, leaving all internal floor areas completely free for future rearrangement if required, at the same time providing what is probably, from the patient's point of view, the most satisfactory method of hospital heating. The hot water for heating and domestic purposes is generated by steam from the main hospital boiler-house, piped to calorifiers in the basement area in the centre of the new building. The same steam also supplies the sterilising equipment in the unit.

Vacuum Cleaning Plant.—A central vacuum cleaning system is laid on to various outlets in each floor at strategic points. It was felt that individual standard vacuum cleaners created an infection hazard with the air exhausted through their dust sacks and warranted the additional expense of the central system.

FIG. 12

The Chapman lecture theatre and waiting-room. A small blackboard, vitrolite screen, and large X-ray viewing box are shown. The projection platform is on the extreme right. The door illustrated is large enough to admit a bed. Note the lines on the floor which help in the correct positioning of the chairs. The chairs can be stacked.

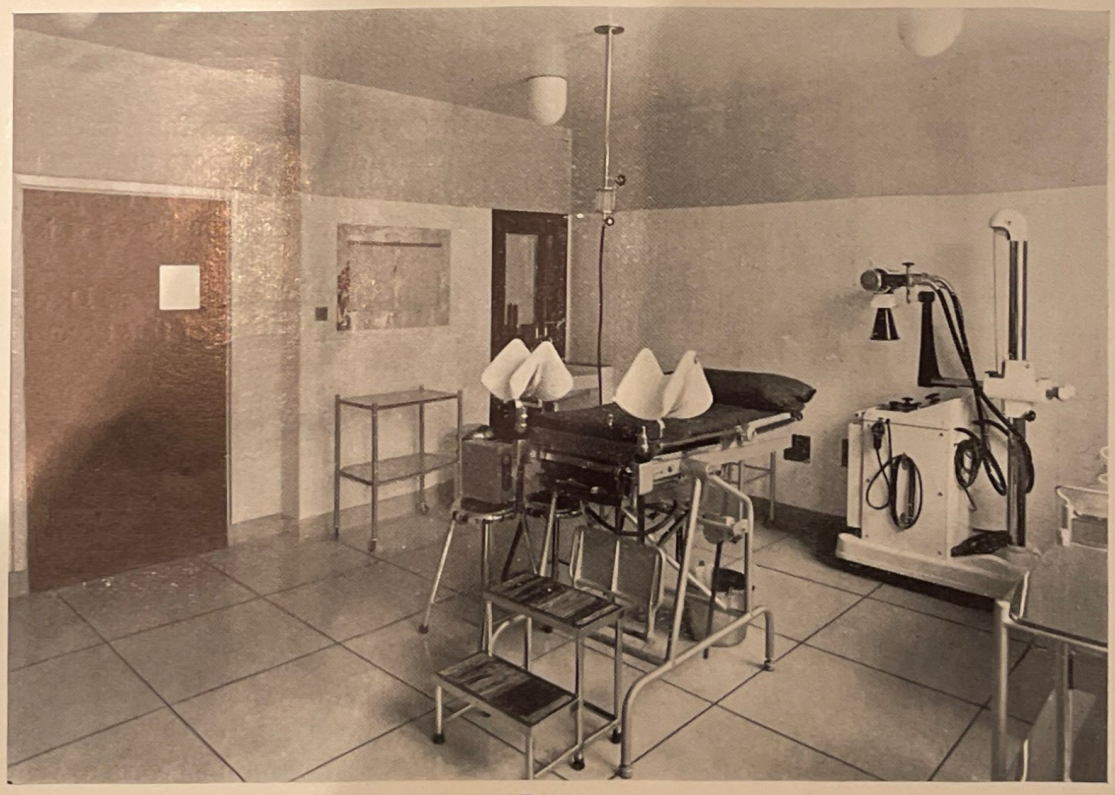

FIG. 13

Out-patients' cystoscopic and pyelographic room. As described in the text, next to it is a fully equipped dark-room, access to which is provided by a cassette passer. The water supply comes from a tank on the first floor. Note the graduated flask.

Electric Lighting.—There is a bed-head switch unit for each patient. The ward lights are cylindrical and crinothene-finished to give a diffuse and " homely " effect.

Finishes.—*Floors.*—Ground floor: Asphalt tile generally and terrazzo to surgical and ancillary rooms.

Upper floors: 4·5 mm. ruboleum to general areas, wards, corridors, etc. Terrazzo to ancillaries with exception of ward kitchens which are Altro-covered throughout.

Walls.—Hardwall plaster generally, painted with oil-bound water paint (pending plaster dry-out). Ancillaries, etc., tiled; surgical suite in matt non-reflecting green tile. Entrance-hall walls panelled with oak. Inter-ward partitions framed in deal, glazed and panelled with birch-faced blockboard. Walls between private wards are staggered stud partitions plastered and sound-deadened with rockwool or fibroglass insulation.

Ceilings.—Generally 12 by 12 in. acoustic tiles on 2 by 2 in. battens in wards, corridors, and public rooms. Hardwall plaster ceilings to ancillaries and theatre suite and service rooms.

Joinery.—Built-in furniture and fittings. With the exception of window and door frames, architraves and skirtings, almost all other joinery and fittings have been french-polished, cellulosed, or varnished instead of paint with reasonable and economical results.

Colours.—As far as possible gay and varying colours were used in decoration and finishings, strong primaries in public areas, and more restful pastel shades in wards, etc., to create wherever possible an impression of space, light, and homeliness without sacrificing hospital cleanliness or creating too many maintenance problems.

Telephone.—There is installation for both a very complete internal and external communication.

The new unit would not have been possible without the continuous support given to urology by the Committee of Management of the Hospital, its Medical Board, three Ministers for Health, and their officials in the Department of Health. The construction started in June 1953 and the department was formally opened in November 1955. The first patient was admitted on 8th December and the first operation was performed by the consulting plastic surgeon to the unit, Professor T. P. Kilner.

The department has been in full use for almost three years and has fully justified all the trouble taken in planning it. It was, one may say, tailored for the purpose and has proved a good and comfortable fit. It is bright, airy, and cheery, things helpful alike to the patients and their attendants. When the limitations of site, space, and finance are considered it is a really fine achievement on the part of the architect.

Finally, it gives me great pleasure to acknowledge the help which Mr Andrew Devane, who had so much to do with the planning of the building, gave in the writing of this account of it.