Republic of Lebanon

Health Planning for South Lebanon

A Study undertaken by Tibbalds Partnership Ltd
financed by the European Economic Community

HEALTH PLANNING FOR SOUTH LEBANON

REGIONAL HOSPITAL PLAN

31 October 1983

الجمهورية اللبنانية
مكتب وزير الدولة لشؤون التنمية الإدارية
مركز مشاريع ودراسات القطاع العام

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FOREWORD

"This report is financed by the European Economic Community from credits of the Technical and Financial Cooperation Programme, signed with the Republic of Lebanon, and established by Tibbalds Partnership Limited. It does not necessarily reflect the opinion of the Commission of the European Communities".

Tibbalds Partnership Limited wishes to record its sincere thanks to the Government of Lebanon for its considerable support and assistance to the team undertaking this work.

CONTENTS

1.0 INTRODUCTION

This report is submitted in accordance with the terms of a contract drawn up between the Government of Lebanon and Tibbalds Partnership Limited covering the content of studies to be carried out between July and October 1983.

It is one of three volumes of the final documentation of this study. It deals with the regional context of South Lebanon and identifies the need for health services. Although by necessity the study has taken into account the full spectrum of health care services, it has not been within its Terms of Reference to fully investigate the detailed needs for primary health care. Rather its focus has been on the reconstruction and further development of hospital-based services in the South.

The two other volumes of the final documentation deal in more depth with two specific components of the regional hospital plan. The first covers the qada of Hasbaya and details the needs and physical solution for a new, small community hospital. The second provides a development control plan for the reconstruction of the Sidon hospital (destroyed in the Israeli invasion of 1982) and its further development into a much needed regional hospital to support the health services and hospital developments throughout the South.

Since to some extent each of the three volumes must stand independently, there is of necessity some repetition in essential background and contextual information.

2.0 SUMMARY OF PROPOSALS

2.1 Policy Context

The proposal of this report have been developed firmly within the context of Government policy - no major shifts in policy have been identified or are seen to be needed. The essential elements of this policy are:

... to repair and extend public primary and secondary services to offer patients a real alternative to private facilities and thereby to assert some degree of influence over the private sector

... to reform health services administration and financial management through a system of semi autonomous Area Health Authorities

... to accord a high priority to the provision of services in South Lebanon.

Implementation of this policy will not require Government to instantly raise major new financial resources for recurrent expenditure since, currently it reimburses the private sector for care given to public patients.

However, significant new capital investment will have to be made by Government and this will call for some external assistance.

2.2 Health Care Needs

The epidemiology of the region suggests the need for services to meet a broad spectrum of ill-health conditions similar to that found in medium-to-high income countries elsewhere in the world. There are no specific diseases (eg tuberculosis, malaria or other vector borne infections etc) which justify special focussed programmes. The priority needs can be summarised as being:

... widely accessible and acceptable integrated maternal and child health services comprising antenatal assessment and care, supervised deliveries, and well-baby and well-child preventive health services

... a basic local hospital service which will support primary care services and provide diagnosis, treatment and competent referral for a wide range of general acute and chronic ill-health

... some basic long term care services for the mentally ill and physically handicapped.

2.3 Strategy

Based on the Government policy context, the epidemiological needs, population and demographic data and social attitudes studies, this report proposes a system of services to cover the South phased for 1983-88 and for 1988-93.

Three levels of hospital are proposed - community, area and regional. The desirable and feasible functions and roles of these three levels have been specified both in providing services for their immediate catchments as well as in fulfilling their essential roles in supporting each other and the development of primary health care.

The degree of provision of these services has been established using comparative statistics from elsewhere since approximately adequate data do not exist in the South. Modest but reasonable standards of provision have been adopted and assumptions have been made about the extent to which the private sector can be expected to meet needs in the various qadas of the region.

2.4 Specific Programme

During the period 1983 to 1988 we recommend the following developments:

... A regional hospital of 250 beds in Sidon

... A community hospital of 50 beds in Hasbaya

... The completion and opening of the area hospital in Nabatiyeh at a complement of 55 beds

... The reopening of beds at Tibnine to increase the bed complement to 65

... The maintenance of the 46-bed Marjayoun hospital at a slightly increased bed complement of 50.

During the second five-year period the following additional developments can be considered provided that the growth of population and its geographic distribution conform to our projections.

... The expansion of the Sidon Hospital from 250 beds to 300

... The construction of a new hospital in Tyre to provide 210 beds and the closure of the existing hospital

... The expansion of Nabatiyeh and Marjayoun hospitals to provide a total of 75 additional beds.

The rationale for these proposals is given in Section 5 of this report.

3.0 BACKGROUND

3.1 South Lebanon

For administrative purposes Lebanon is divided into five separate regions as shown below. Except for Greater Beirut, South Lebanon is geographically the smallest of these, with an area of 2000 sq.km.

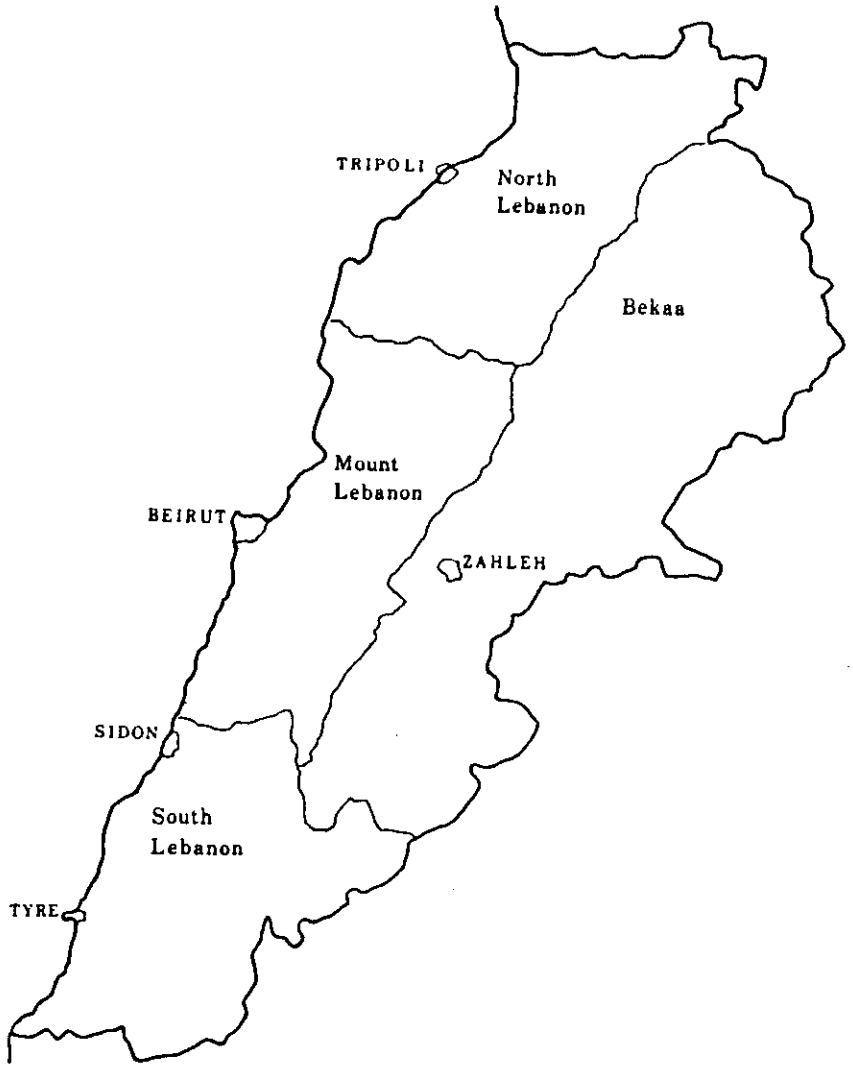


Figure 1: Regions of Lebanon

The capital of the region is Sidon, the second largest city in the country. It acts as the administrative centre for the region (sometimes called mohafazat). Other large towns in the region are Tyre and Nabatiyeh.

The population of the region is predominantly Shiite Moslems, although substantial numbers of Sunnite Moslems, Christians and Druze also live in the region.

The mainstay of the regional economy is agriculture, but there is employment in small-scale industry and the service sector (the former mainly in and around Sidon). Much of the agriculture produce is marketed. Average incomes are generally above subsistence level, although poverty exists, particularly amongst families where there is no able-bodied bread-winner.

Transport networks in the region generally run east-west, linking the hinterland with the main arterial north-south road of the region (and indeed the country), that follows the coast linking Tyre and Sidon with Beirut (see map below). The border with Syria and Israel in the east consists of a mountain ridge, topped by Mount Hermon.

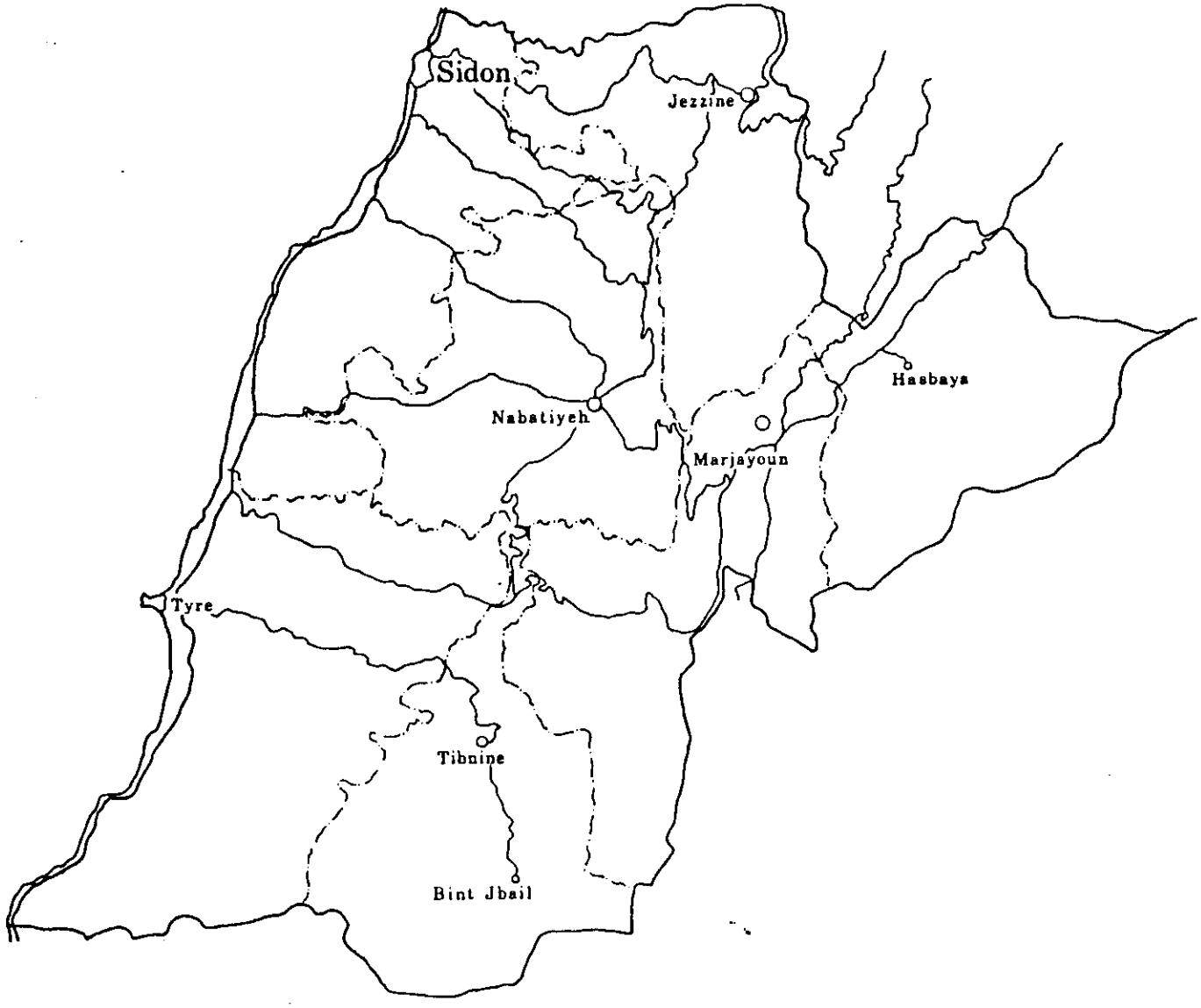


Figure 2: South Lebanon showing main roads

3.2 Health Services in South Lebanon

Health services in Lebanon consist of a mix of private and public facilities. Historically, the Government's role in the promotion, protection and restoration of good health was limited to a public health approach. Gradually, without any formal change of policy a shift was initiated to a direct role in the provision of health care services, until by the early 1970's a small network had been established of public hospitals and health centres in major towns throughout the country. However, in the late 1970's, concurrent growth in peoples expectations and demands, an increase in the number of doctors trained, and a deterioration in the Government's control over the country and its institutions led to a major expansion of private provision, both absolutely and relative to the public sector.

As a consequence South Lebanon now has an abundance of thirteen private hospitals in Sidon, and two other private hospitals in the region, but only five public hospitals. Moreover, of the five public hospitals, only three currently offer inpatient services, and one of these relies heavily on Israeli support. Their systems of administration, personnel management, supplies requisition, pharmaceutical procurement and equipment repair are all deficient. Even food for inpatients is unavailable at times.

The preventive services are little better. The private sector provides none while Government epidemiological surveillance is ineffective and programmes of immunisation are spasmodic. Maternal and child health services are virtually absent.

Summary details of the private hospitals are contained in Appendix 1, and a report on each of the Government hospitals is provided in Appendix 2.

4.0 GOVERNMENT HEALTH POLICY AND STRATEGY FOR CHANGE

4.1 Background

The Government accepts the importance of the private sector and does not intend to supplant private health care arrangements. However, it is the Government's objective to ensure that all citizens receive good quality medical care irrespective of their ability to pay. It intends to achieve this policy by a direct involvement in the provision of services, so that patients have a genuine freedom of choice between public and private services. By offering such a choice it believes that the benefits of competition will protect the patients from unfairly high private medical charges.

At the same time the Government intends to protect the public from poor quality medical care by restricting the activities of hospitals designated 'general acute hospitals' to those with more than 50 beds. Any hospital with less than 50 beds will only be permitted to act as a single-specialty or long-stay hospital.

The Government is aware that in the past the management of public health services was inefficient. It has therefore adopted a three-pronged strategy:

... to introduce legislative changes to establish a decentralised, semi-autonomous management structure for health services;

... to change the mechanisms for financing public health services;

... to embark upon training programmes within the country.

4.2 Proposed legislation

Legislation is under preparation for the establishment of Area Health Authorities throughout the country. Each Area Health Authority (AHA) would cover a population of 2-400 000, although this could vary according to geographical considerations. The AHA would be charged with the provision of preventive health services, including health education, the coordination of the activities of private primary care services, the establishment of training programmes for community health workers, and the management of services (health centres and community hospitals) where appropriate. The essential element of the proposed legislation is the development of primary care services which embrace the WHO "Health for All by 2000" policy. One component of that policy is the involvement of the local community in the planning, implementation, operation and evaluation of the services, and this will be achieved by the setting up of Citizens Advisory Boards.

Accompanying the proposed AHA legislation is a philosophy of providing medical care through a network of community health centres and community hospitals. The health centres will be designed to cater for 30-40 000 people and provide the full range of primary care; the community hospitals will be established on the principle of one per qada, to support the health centres and to provide basic secondary care. It is further planned that in each area one community hospital will be nominated the area hospital and each region will have a regional hospital. The sizes and roles of each of these types of hospital are explained in Section 6.

The decentralisation of authority will include freedom for AHA's to establish their own personnel policies, unencumbered by the weight of Civil Service regulations pertaining to salary and conditions. This is an important development, since without such freedom the government will be unable to operate rural services. Civil Service salary levels will be insufficient to induce professional staff to work on a full-time basis (the only basis on which a staff committed to the welfare of the population can effectively meet the commitment), and current practices of appointment, discipline, and transfer will only lead, as in South Lebanon at present, to the payment of salaries without any assurance of disciplined and committed service.

4.3 Proposed reform of financing mechanisms

A further component of the government's proposals involves the financing of AHA's and the services they provide. For hospital services in particular one method currently under study is to permit the AHA's public hospitals to offer medical care to private fee paying patients. Hence the public hospitals would provide:

... free medical care for those unable to pay, or entitled to it by virtue of employment; or

... medical care at the government approved scales of fees for private patients and those who are insured.

Private and insured patients will only be prepared to pay for medical care at a Government hospital if it is as good (or better) than the care available at private hospitals. Hence the services available from public hospitals must offer the patients genuine freedom of choice, without obliging patients who use public hospitals to accept a lower standard of care. Only if this is done will the hospitals receive enough patients to operate at optimal utilisation, and hence receive reimbursement sufficient to enable them to be run efficiently.

Accompanying this broadening of the catchment population for public hospitals will be an administrative reform of the government's health insurance and reimbursement schemes, which are currently under the control of four Government agencies. It is intended to rationalise these various schemes to provide health insurance for all government employees and their families under one Insurance Fund. Contractual arrangements will then be established between the Fund and the public hospitals.

4.4 Proposed training programmes

It is not possible to establish a quantified picture of staff availability and requirements since there is not yet a national health manpower plan for Lebanon. However, on a national basis there is no shortage of doctors, although there are regional imbalances. Currently substantial numbers of doctors are in training overseas.

There is, however, a national shortage of trained nurses. The larger private hospitals run their own training schools, but even they have been forced to recruit nurses from overseas. WHO has recommended the establishment of regional health training institutes, and the government accepts that a reform and an extension of nurse training are essential components of its plans for a public hospital network. It therefore intends to link the proposals for decentralised administration with improvements in nurse training.

4.5 Area Health Authorities in South Lebanon

To implement the policy of decentralisation it is proposed to divide South Lebanon into three Area Health Authorities by combining qadas as follows:

... Sidon and Jezzine
... Nabatiyeh, Marjayoun and Hasbaya
... Tyre and Bint Jbail

The qada boundaries are shown in the map below.

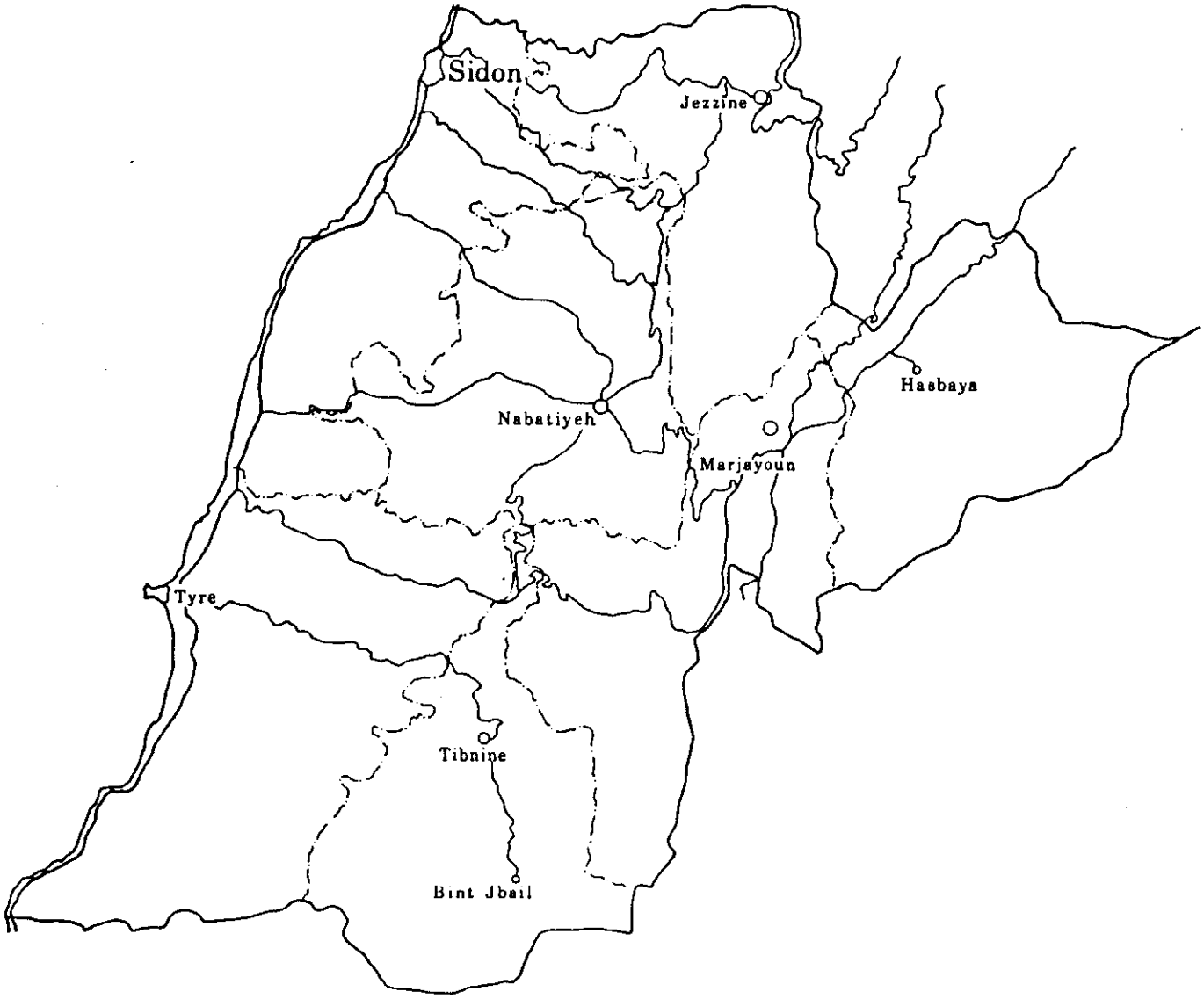


Figure 3: South Lebanon, showing qada boundaries and AHA boundaries

The estimated populations of the three AHA's are 225 000 (Sidon), 140 000 (Nabatiyeh), and 135 000 (Tyre). Although these populations are smaller than envisaged in the proposed national legislation, they take account of communication routes and provide a sensible framework for administering health care services in South Lebanon.

4.6 Summary

The Government is aware that the past record of publicly administered health services leaves much to be desired, and it has therefore embarked upon an ambitious programme of reform. In developing these planning proposals the consultants have assumed the following:

... that the Government's proposals for administrative reform will take place;

... that decentralisation will lead to a management which is more efficient, effective and dedicated; and

... that financing rationalisation will permit the system to function as proposed.

5.0 HOSPITAL PLANNING STRATEGY

The strategy for the provision of public hospital services and facilities described below has been developed against the background of the Government's philosophy for providing hospital services, and its proposals for legislative and financial reform. Development of a plan for the provision of public hospital beds has involved the following steps:

... Estimating the current and future populations of each qada;

... Identifying the health care needs of the population and in particular the specific requirements for hospital based services;

... Identifying current and future provision of private hospital beds of an acceptable standard;

... Establishing policy objectives for the desirable balance of public-to-private hospital beds in each qada;

... Specification of the requirements for public hospital beds by type throughout South Lebanon and development of a strategy to achieve this;

... Developing a phased programme for the construction or rehabilitation of public hospitals to accord with the strategy within the constraints of the Government's capacity to provide funds and its ability to provide staff and to manage and administer the resultant network of hospitals.

5.1 Population Size, Distribution and Growth

There are no birth and death registration statistics in South Lebanon, and in the absence of a recent census or government decreed planning guidelines, estimations of the size, location and rate of growth of population are all subject to wide margins of error.

Estimates of the size of the populations of the seven qadas of South Lebanon have been derived from five sources:

- public school enrolment figures supplied by the Ministry of Education
- public and private school enrolment figures supplied by UNICEF
- projections of a planning model based on 1975 date
- estimates supplied by Ministry of Health, Sidon
- electoral registration statistics, published in Al Baheth Cultural Review for 1981.

The various estimates from these sources are tabulated in Appendix 3. There is a wide variation in the estimates of the regional population thus derived. Our field work in the South indicates that the planning estimates given in the table below constitute the best possible estimates at this point in time. They therefore form the basis for the calculation of needs in this plan

In the case of Hasbaya qada, these information sources were supplemented by our field work in all villages. Our assessment was that the population of Hasbaya qada is 26 500 as an average over winter and summer (see Health Planning for South Lebanon: Hasbaya). For present purposes, we have rounded all qada population estimates to the nearest 5 000.

Estimated Population of South Lebanon by Qada, 1983

Qada	Estimated Population (mid 1983)
Sidon	200 000
Jezzine	25 000
Tyre	100 000
Bint Jbail	35 000
Nabatiyeh	65 000
Marjayoun	50 000
Hasbaya	25 000
	500 000

Without birth and registration statistics it is not possible to determine accurately the natural rate of growth of the population. The birth rate appears to be about 3% per annum, perhaps slightly higher, while the death rate is low. However, the problem of making reasonable assumptions about natural rates of population growth is over-shadowed in South Lebanon by migration.

The nett effect of three types of migratory movement must be considered:

- migration from rural to urban residence within South Lebanon

- migration out of South Lebanon to Beirut, or overseas

- migration into South Lebanon as the result of development opportunities presented by a peaceful settlement of present problems.

Migration from rural to urban residence and from agricultural self-employment to industrial/service wage-employment will result in a faster rate of growth in the two towns of Sidon and Tyre. Furthermore, inward migration into the region after the establishment of peace is more likely to occur in Sidon and Tyre than in the rural qadas. Conversely, outward migration from the region is as likely to occur from the rural areas as the two cities.

Therefore, the following assumptions have been made as the basis of planning:

- a rate of growth of 3% per annum for the region as a whole

- migration to Sidon and Tyre from the rural qadas resulting in no population increase in the five rural qadas of Jezzine, Bint Jbail, Nabatiyeh, Marjayoun and Hasbaya

- two thirds of the regional increase in population occurring in Sidon, and one third in Tyre.

The table below shows the effects of these assumptions over five, seven and ten year periods.

Projected Population Estimates, by Qada

	Estimated Population			
Qada	mid 1983 ('000)	mid 1988 ('000)	mid 1990 ('000)	mid 1993 ('000)
Sidon	200	253	277	315
Jezzine	25	25	25	25
Tyre	100	127	138	157
Bint Jbail	35	35	35	35
Nabatiyeh	65	65	65	65
Marjayoun	50	50	50	50
Hasbaya	25	25	25	25
South Lebanon	500	580	615	672

5.2 Health Care Needs

Determination of the numbers of various types of hospital beds required in South Lebanon depends not only on the number of people being served but also on the epidemiological needs of the various age-sex groups in the population, the degree of provision of primary health care services, the pattern of hospital activity (eg average lengths of stay in hospital) etc.

5.2.1 Epidemiology

There are few validated epidemiological facts about Lebanon. National systems of disease notification do not operate, even for communicable or infectious diseases, and there is no reliable system of death certification. Even the hospitals do not maintain systems of coding, tabulation or analysis of the epidemiological pattern of their work. Few studies have been carried out in the last few years and of those few, most took place in Beirut. The assessment of the epidemiological situation that follows is derived from our own studies and interviews carried out in Lebanon and from an extensive literature search.

A study of the certified causes of death in Beirut in 1965 (see Appendix 6, ref 1) showed coronary heart disease to be the leading cause, followed by stroke, cancer, accidents and childhood infections - a pattern, except for the last, very similar to that of an industrialised European country. Diseases such as bronchitis, gastro-enteritis, rheumatism, and breast and stomach cancers occur but not excessively - according to local doctors. Tuberculosis and tetanus are both rare. Malaria is non-existent.

Measles and whooping cough occur in children, but no especially adverse consequences are observed. Diptheria and polio rarely occur. Currently there is a national programme of vaccination to prevent the reoccurence of polio. Dietary habits of the farming community (generally the poorer section of the society) do not seem to have led to any undernutrition.

One statistical study (Appendix 6, ref 2) found that in 1977 in rural areas of the South more than 50% of women were delivered by untrained midwives. This study also provided useful insight into other aspects of maternal and child health:

- intestinal complaints constituted the most frequent reason for seeking medical care for infants (the highest prevalence being in the summer months)

- amongst rural women of little education, 40% of the sample became pregnant again within 18 months of the previous birth (there are several adverse consequences to both mother and child of such inadeqaute birth spacing)

- very few visits were made for well-baby care

- other important reasons for attendance were skin problems and, after the first 6 months, dental problems

- as is found almost everywhere else in the world, the prevalence of breast feeding declined with rising levels of education and urbanisation

- immunisation coverage was very unsatisfactory. Substantial proportions of children had not been immunised for polio (40%) or DPT (65%) at 18 months. Hardly any infants had received measles vaccination.

Mental handicap (including Down's Syndrome) appears to be more common in rural communities than towns but this may only be because there is less tendency to separate, institutionalise and reject children. Mental handicap is mainly related to poor obstetric care (studies in other countries show only a minority of people with genetic causes for their handicap).

There is moderate concern about dental health. Some middle class people brush their teeth. Many people have quite good dentition and most have at least some natural teeth. Caries and gum inflammation are the main diseases and as in Western countries, would respond to simple preventive measures.

In summary, the epidemiology of the region is not greatly different from that found in medium-to-high income societies elsewhere with the possible exception of a higher rate of gastrointestinal infections in infants. The region experiences a broad spectrum of chronic and general acute illness including accidents. There appear to be no specific diseases (eg malaria, tuberculosis, other vector borne infections etc) which require special programmes. However, the high birth rates and lack of adequate antenatal and obstetric services must result in a high incidence of birth related illness including infant mortality, mental and physical handicap, and retarded growth and development.

5.2.2 Primary Health Care

The epidemiological picture shows the need for a regional primary health care (PHC) system including maternal and child health care (MCH) and supported by basic, accessible hospital services. These would have to be services provided and run by Government to ensure that the full range of needed services were provided - private PHC will by necessity be limited to general practice medicine providing only curative services. There is no profit to be made in providing preventive or environmental services and these are an indispensable component of the PHC services required throughout most of the South.

Although a comprehensive and integrated PHC system supported by hospital services can be identified as the pattern of services required in the South, it is clear that it will not be possible to achieve a dramatic switch to such a system in the short term.

Lebanon is traditionally a free enterprise society in which almost all aspects of life are decided by market forces. Health care is no exception. The result has been a heavy reliance on private medicine and a heavy emphasis on hospital-based care.

It is clear that Government intervention in the medical sector must take account of this reality and the views and expectations that the private sector has built up in the population.

The achievement of the AHA system in the South with its components of more local autonomy and financial freedom (see section 4.5) will already constitute a major leap forward towards creating a system out of which can grow more epidemiologically focussed and cost effective services. The provision of modest but high quality Community Hospitals will similarly create confidence in a Government health system - a confidence that presently does not generally exist. From this base of administrative reform and services improvement, public PHC will be developed.

It is worth noting at this point that, in fact, very little is known about what precisely an appropriate PHC system would be. It has not been within the scope of this study to investigate this. Proposals for a mix of manpower types and specification of roles and functions would be highly speculative and based for the most part on experience from elsewhere. Such models may not work well in Lebanon; may not be acceptable to the population or may not achieve good value for the investment.

A great deal of work has yet to be done to make informed and realistic decisions about forms of PHC appropriate for the South. People may not want or accept what planners identify as needed.

All this is by way of arguing that decentralisation and PHC development must be achieved incrementally. The Government of Lebanon is well aware of this and the policy and legislative changes are the first essential steps.

In Hasbaya qada (which our Terms of Reference called upon us to investigate in much more detail than the remainder of the South), we have proposed not only the developent of a small community hospital but other programmes aimed at evolving PHC services.

5.2.3 Hospital Bed Requirements

Statistics about current hospital workloads in South Lebanon are scarce. They are not available either from the three public hospitals with inpatients or from many of the private hospitals. Therefore, our study of such figures presents a biased picture. Moreover the extent and direction of this bias is unclear. An additional problem arising from the way hospital services are provided at present is that these figures do not necessarily reflect the real epidemiological needs and therefore cast no light on the resources required to meet those needs.

The figures do not reflect the epidemiological needs because many patients cannot obtain medical care when they need it. They may lack the resources to obtain private care, and/or may not have access, or be willing to seek access, to public hospitals. The hospitals' workload will reflect only the pattern of illness that is presented to it, which, because of the exclusion of some patients, is not necessarily an accurate reflection of underlying need.

Hospital workload statistics also fail to provide a true picture of resource requirements. Patients who must pay for their care indirectly (either at the time of use or through self-initiated insurance co-payment schemes) will seek to minimise their costs. Simultaneously hospitals may seek to maximise their income, the consequence of which might be towards shorter lengths of stay (with a high proportion of elective, as opposed to emergency, surgery), or alternatively towards longer lengths of stay (if the hospital in question is underutilised and wishes therefore to keep patients in hospital as long as possible).

In summary, we have concluded that such hospital workload statistics as are available are biased (because of their incompleteness), do not reflect epidemiological need (because of the selective nature of the patients), and do not reflect real resource requirements (because of the interaction of the patients' ability or willingness to pay with the private hospitals' financial objectives) and therefore they do not provide a useful basis for planning.

Since adequate statistics on South Lebanon's hospitals are not available, we have made assumptions about the pattern of hospital activity, and hence the need for beds, on the basis of comparisons with other countries having similar age/sex population structures, similar epidemiological patterns and a similar health services structure - that is, mixed private and public services.

One such country is Kuwait where in 1980-82, a substantial study [1] was carried out to determine hospital bed needs. Established British statistics were used as base data and amended to take account of age, sex and morbidity differences between the British and Kuwait populations.

As discussed above, data is not available with which to carry out the same exercise for South Lebanon. However, it is believed that the needs for secondary health services in South Lebanon are close to those of Kuwait and we propose the use of the same norms, defined in terms of the number of beds required in each specialty per 1000 population, and listed in the table below.

1 Kuwait Health Plan Vols 1-IV, Office for National Health Planning (Ministry of Public Health), Kuwait, 1983.

Planning Norms for Acute Hospital Beds by Specialty

Specialty	Planning provision: Beds per 1000 population
General Medicine	0,40
General Surgery	0,35
Paediatrics	0,50
Obstetrics	0,42
Gynaecology	0,20
Trauma & Orthopaedics	0,25
Psychiatry	0,20
ENT	0,07
Ophthalmology	0,06
Tertiary Specialties	0,20
TOTAL	2,65

Before applying these norms to the population of South Lebanon it is necessary to consider the implications of the proposed Government policy for community, area and regional hospitals. In principle the community hospitals, area hospitals and regional hospitals will form a patient referral chain. The distribution of services between the hospitals is illustrated in the chart below.

Distribution of Medical and Other Health Services

* = Outpatient Services Areas
** = Outpatient and Inpatient Services

SERVICE	Health Centre & Dispensary (1)	Community Hospital (1)	Area Hospital (2)	Regional Hospital (2)	National Hospital (2)
PRIMARY CONTACT					
Major trauma			*	**	
Minor trauma	*	*	*	**	
Non-trauma emergency			*	**	
General practice	*				
MCH services	*				
School health service	*				
Health education	*				
Dentistry	*				
Environmental health			*		

SECONDARY & TERTIARY REFERRAL					
Internal medicine	*	**	**	**	
Paediatric medicine	*	**	**	**	
Acute psychiatry		*	**	**	
Dermatology			*	**	
General surgery	*	**	**	**	
Obstetrics	*(3)	**	**	**	
Gynaecology	*(3)	**	**	**	
Orthopaedics		*	**	**	
ENT			*	**	
Ophthalmology			*	**	
Dental surgery			*	**	
Isolation (5)					
Cardiology			*	**	
Neurology			*	**	
Radiotherapy & Oncology				*	**
Physical medicine				**	**
Thoracic surgery			*	**	
Neurosurgery			*	**	
Urology		*(4)	*	**	
Plastic surgery			*	**	
Other specialties				**	**
SUPPORT SERVICES (6)					
Anaesthesia		*	**	**	
Laboratory	*	*	**	**	
Diagnostic Imaging		*	**	**	
Pharmacy	*	*	*	*	
Sterilizing		*	*	*	
Blood bank		*	*	*	
Physiotherapy		*	*	**	

NOTES:

1 Medical cover on-site provided during normal working hours only
2 24-hour medical cover provided on-site for inpatient services
3 Full-time cover provided by resident midwife
4 Renal dialysis for outpatients only
5 Isolation rooms provided within standard wards
6 */** distinction refers to 8hr/24hr cover, not outpatient/inpatients services

It is proposed that the community hospitals will provide the four basic inpatients services of general medicine, general surgery, paediatrics and obstetrics/gynaecology. Not all patients within these specialties will be treated at the community hospitals - some will require services more appropriately provided by an area or regional hospital. At the same time there may be other patients whose care would in other circumstances be undertaken by, for example, an orthopaedic surgeon, but who in a community hospital would be looked after by the general surgeon. On the basis that such losses and gains of patients will be roughly i balance with one another it is proposed that the norms for the four specialties listed above be aggregated to represent the level of bed provision appropriate to the community hospitals. These community hospitals will provide the base upon which more effective primary health care services (PHC) will be developed. By providing quality care in supporting PHC activities, the community hospitals will be instrumental in gaining more credibility for public (PHC) health services.

The area hospitals will support the community hospitals within their areas, and also provide additional services. These would include a 24-hour staffed accident and emergency department, and additional inpatients facilities for orthopaedics, neonatology and acute psychiatry.

The regional hospital will provide a full range of secondary and acute inpatient services, together with some tertiary specialty units. While it is intended that the regional hospital should offer a comprehensive service at the secondary level of care this cannot sensibly be true of more specialised care. Some tertiary specialties, for example radiotherapy, would be more effectively and efficiently provided on a national basis and will probably, therefore, remain in Beirut. Others require too few beds for duplication between the public and private sectors to be in the interests of economic high-quality care. It will be necessary, therefore, for agreements to be reached as to the distribution of such specialties between the regional hospital and the private sector and this is particularly the case with the Hariri Medical Centre.

In addition to the provision of inpatient services the regional hospital will give support to area and community hospitals in diagnostic and other supporting services. Staff of the regional hospital will hold referral clinics in the area and community hospitals in order to cover those specialties not permanently represented at these levels of the hospital service.

To reflect the pattern of service described above it is proposed that the norms of provision (given in the table above) applied in the following way:

- for each qada a community hospital providing 1,87 beds per 1000 population

- for each area an additional 0,45 beds per 1000 population

- for each region an additional 0,33 beds per 1000 population

The resulting number of beds required to serve the populations of the region are shown in the tables below covering 1988 and 1993 respectively.

Projected Acute Bed Requirements, by Qada in 1988

Qada	Qada Popn ('000)	Area Popn ('000)	Community Beds	Area Beds	Regional Beds	Total Beds
Sidon	253	278	473	125	191	789
Jezzine	25		47			47
Tyre	127	162	238	73		311
Bint Jbail	35		65			65
Nabatiyeh	65	140	122	63		185
Marjayoun	50		93			93
Hasbaya	25		47			47
South Lebanon	580	580	1 085	261	191	1 537

Projected Acute Bed Requirements, by Qada in 1993

Qada	Qada Popn ('000)	Area Popn ('000)	Qada Beds	Area Beds	Regional Beds	Total Beds
Sidon	315	340	589	153	222	964
Jezzine	25		47			47
Tyre	157	192	294	86		380
Bint Jbail	35		65			65
Nabatiyeh	65	140	122	63		185
Marjayoun	50		93			93
Hasbaya	25		47			47
South Lebanon	672	672	1 257	302	222	1 781

5.3 Private Hospital Beds

Private hospitals in South Lebanon are largely concentrated in and around Sidon. There are 15 such hospitals in or near Sidon, (including the newly constructed Hariri Medical Centre) providing a total of 1 094 beds - see Appendix 1. In addition, there is a 38-bed private hospital in Nabatiyeh and a 90-bed private hospital in Tyre.

A number of additions to this bedstock are currently under construction. These will raise the Sidon private bed complement to 1194, and that of Nabatiyeh to 75.

Not all of these beds are considered relevant to the planning of secondary acute services in South Lebanon. The Government of Lebanon has determined that only institutions with 50 or more beds will be entitled to call themselves hospitals, unless they revert to single-specialty usage. On this basis the future Sidon complement of 1194 reduces to 1029. Furthermore, the Hariri Medical Centre has been built as a national, and possibly international, referral centre so that a majority of its patients may not come from the region. For the purposes of this plan we have assumed that only 140 of the 340 beds available would provide services to the population of South Lebanon, reducing the effective Sidon total to 829 beds.

The locations and numbers of the effective private beds are summarised in the Table below:

Private Hospital Beds by Qada

Qada	Existing Private Beds	Private Beds Under Construction	Future Total
Sidon	729	100	829
Jezzine	-	-	-
Tyre	90	-	90
Bint Jbail	-	-	-
Nabatiyeh	-	75	75
Marjayoun	-	-	-
Hasbaya	-	-	-
TOTAL	819	175	994

The impact such provision has on policy for the provision of public hospital beds is discussed in the next section.

5.4 Policy for Public Hospital Provision

To specify a programme to meet the needs of the population, as defined by our earlier calculations and taking into account existing provision, requires policies for the roles of both private and public services. Government policies for health care accept the importance of freedom of choice. The Government does not intend to restrict the right of patients to seek private health care. However, it does wish to ensure that high quality health services are available not only to those who can afford them or to those who live in large towns, but also to the rest of the population. This necessitates concentration of Government services in two areas:

- hospital services for uninsured patients who are too poor to afford medical care or who, by reason of their employment, are entitled to public health care;

- hospital services for all patients in places where the number of such patients is too small to induce private hospitals to establish themselves.

The Government therefore intends to establish hospitals which provide services to varying proportions of the total population depending on location. In some places, notably the rural areas, the public hospitals will cater for the whole population; in others, where private hospitals exist, or perhaps might exist in the future, only a proportion of the population's needs will be met in public hospitals. We recommend that as a general policy for South Lebanon the Government ought to meet as a minimum the needs of 30% of the population, even where private hospitals do exist. If this level of provision is not reached there are likely to be three consequences:

- the poorer sections of society will not receive essential health care services

- the government will be obliged to continue to devote a substantial proportion of its budget to reimbursing the private sector for the care of patients for whom the government accepts the responsibility of care

- the government will have insufficient leverage over the private sector to control its charges through a policy of competition.

In our view, the following targets for public hospital provision represent an appropriate interpretation of these policies.

For the population of Sidon and of Jezzine, the public hospital service should meet 30% of the identified need, both of these qadas having ready access to extensive private hospital services. The populations of Bint Jbail, Marjayoun and Hasbaya on the other hand should have 100% of their needs met by the public hospital service. These qadas not only have no local private hospital services at present but are unlikely to have them in the future because of the small sizes of their populations and their income levels. Tyre and Nabatiyeh fall between these two extremes in that they do each have private hospital services but the size and wealth of their communities is such that it is unlikely that they will ever have the scale or variety of private services available to residents of Sidon. In our view, a reasonable target for the public hospital service here would be in the order of 50% of the identified need.

These targets, in association with the bed indices given earlier, produce the following bed requirements, public and private, in 1988 and 1993.

Projected Hospital Bed Requirements, by Qada in 1988 and 1993

Qada	1988			1993		
	Public	Private	Total	Public	Private	Total
Sidon	237	552	789	289	675	964
Jezzine	14	33	47	14	33	47

Tyre	156	155	311	190	190	380
Bint Jbail	65	-	65	65	-	65
Nabatiyeh	93	92	185	93	92	185
Marjayoun	93	-	93	93	-	93
Hasbaya	47	-	47	47	-	47
South Lebanon	705	832	1 537	791	990	1 781

5.5 Strategy for Developing Public Hospitals

Comparison between the distribution of beds proposed above (as a set of targets) and the current and likely short-term future bed distribution shows up various instances both of shortfall and of overprovision. These are given in the table below. The essential problem revealed by the comparison is that while South Lebanon as a whole is substantially short of hospital beds, there is currently an absolute overprovision of private beds which takes the form of a substantial over-concentration of such beds in Sidon.

Shortfall and Overprovision of Public and Private Hospital Beds by Qada in 1988 and 1993

	Existing		1988			1993		
Qada	Public	Private	Public	Private	Total	Public	Private	Total
Sidon	-	829	-237	+277	+ 40	-289	+154	-135
Jezzine	-	-	- 14	- 33	- 47	- 14	- 33	- 47
Tyre	56	90	-100	- 65	-165	-134	-100	-234
Bint Jbail	35	-	- 30	-	- 30	- 30		- 30
Nabatiyeh	-	75	- 93	- 17	-110	- 93	- 17	-110
Marjayoun	46	-	- 47	-	- 47	- 47	-	- 47
Hasbaya	-	-	- 47	-	- 47	- 47	-	- 47
TOTAL			-568	+162	-406	-654	+ 4	-650

Taking the region as a whole, the proposed balance between public and private provision could be achieved within ten years so long as no additional private facilities are constructed. For this reason it is imperative that action be taken to influence private hospital construction in South Lebanon, and the public sector built up as resources permit. However, even after 1993 there will continue to be geographic imbalance within the region in private sector provision, taking the form of overprovision in Sidon relative

to other parts of the region. To the extent that the use of private facilities in Sidon is a personal choice, that choice presumably includes consideration of travel costs to Sidon for those patients who live elsewhere. Such patients will continue to represent a substantial proportion of the workload, as is demonstrated later.

Elimination of the qada-by-qada shortfalls in public hospital beds shown in the table above would require the construction of 568 beds by 1988, and a further 86 by 1993 to bring the total addition to 654 public hospital beds. Such a programme is likely to be unrealistically demanding during the first five-year period. Also, the construction of as large a number of public beds as 568 by 1988 would result in a total hospital bed complement, including private beds, substantially in excess of that required on the basis of the proposed norm of 2.65 beds per 1000 population. This is because in 1988 there will still be an excess of private beds both in Sidon and in the region as a whole.

An alternative response to the shortfalls and instances of overprovision identified in the table above can be envisaged as follows. While the targets for public hospital provision would remain the same for the longer term, projects to be achieved by 1988 would be based on a recognition and acceptance of the role that many of the private beds in Sidon will continue to play in serving the residents of other parts of South Lebanon. This would allow public hospital provision to be scaled down in the short term to a more realistically achievable programme. The results of this approach are shown below:

Requirements for Public Hospital Beds in 1988

Qada	Total Bed Requirement	Private Beds				Public Beds Required
		Existing	Serving Other Areas	Serving This Area	Total Effective Provision	TOTAL
Sidon	789	829	-244	585	585	204
Jezzine	47	-	-	-	-	47
Area Total	836	829	-244	585	585	251
Tyre	311	90	-	+129	219	92
Bint Jbail	65	-	-	-	-	65
Area Total	376	90	-	+129	219	157

Nabatiyeh	185	)				(42
		) 75		+115	190	(
Marjayoun	93	)				(46
Hasbaya	47	-	-	-	-	47
Area Total	325	75	-	+115	190	135
TOTAL	1 537	994	-244	+244	994	543

A few words of explanation of the proposals made in the table are required. In order that the minimum target of 30% public provision is achieved in Sidon, and is consistent with the overall bed index, it is necessary to "assign" 244 of the 829 private beds to serve the other two areas of Tyre and Nabatiyeh. This has been done in proportion to the projected populations of these areas taking into account private hospital beds located there. This reassignment of private beds results in a situation where the public hospital beds required in the Tyre and Nabatiyeh areas to bring the total effective provision up to 2.65 beds per 1000 population amounts to 42% of total need. Distribution of those public beds to individual qadas and, by implication, to individual community hospitals has been made as follows.

In the Tyre area, Bint Jbail continues to be allocated public beds to meet 100% of its needs. The remaining beds allocated to Tyre amount to 30% of the total requirement of the qada. In the Nabatiyeh area, Hasbaya qada continues to be allocated public beds to meet 100% of its needs. The Marjayoun qada is allocated beds equal to the present bed complement of the existing hospital, which amount to 49% of total requirements; and the remaining beds allocated to Nabatiyeh amount to 23% of total requirements. This latter figure falls below the minimum provision of 30% and is discussed further below.

The total public hospital bed provision proposed to be achieved by 1988 is 543, resulting in a need for 406 additional beds as opposed to the requirement for 568 additional beds resulting from strict application of the public sector targets. The construction programme required to achieve both this interim provision and the longer-term needs of the region is discussed below.

5.6 Public Hospital Construction Programme

The analyses given above have all been carried out on a qada-by-qada basis. However, in developing a programme for construction, geographical and other factors need to be considered, particularly in relation to Sidon and Jezzine.

It is clear that a large public hospital is required in Sidon. Given that this is provided we do not believe that the qada of Jezzine needs its own community hospital. Most of the residents of this qada live close to the road between Sidon and Jezzine and few people live east of Jezzine. Therefore those who seek medical care are more likely to travel west into Sidon, where the large public hospital will be located, rather than east to Jezzine, where at most a small community hospital would be located. For planning purposes therefore it is more appropriate to treat the two qadas of Sidon and Jezzine as one.

In determining the bed complement of this and the other public hospitals it is necessary to balance our assessments of short and longer-term needs against the constraints of existing buildings and the uncertainties surrounding our forward projections of population size and location. During the period 1983 to 1988 we recommend the following developments:

... A regional hospital of 250 beds in Sidon

... A community hospital of 50 beds in Hasbaya

... The completion and opening of the area hospital in Nabatiyeh at a complement of 55 beds

... The reopening of beds at Tibnine to increase the bed complement to 65

... The maintenance of the 46-bed Marjayoun hospital at a slightly increased bed complement of 50.

During the second five-year period the following additional developments can be considered provided that the growth of population and its geographic distribution conform to our projections.

... The expansion of the Sidon Hospital from 250 beds to 300

... The construction of a new hospital in Tyre to provide 210 beds and the closure of the existing hospital

... The expansion of Nabatiyeh and Marjayoun hospitals to provide a total of 75 additional beds.

The rationale for these proposals is given below.

Sidon

A hospital of 250 beds is proposed to meet assessed requirements in 1988. We consider that to plan for any greater number of beds than this in the first instance involves placing too much reliance on unsubstantiated population projections. On the other hand, a significantly smaller number than this would not meet the real needs of the regional population and, given the range of specialties to be accommodated, would result in some service units that were uneconomically small and medically inadvisable.

Tyre

The longer term requirement is for a substantial increase in public sector beds, from 56 at present to about 210 in 1991. Such expansion cannot sensibly be accommodated on the present site and therefore a new hospital will be required even if population growth varies somewhat from our projections. In the short-term it would be wise to avoid further substantial investment in the existing site. Therefore it is proposed that expansion during the first 5-year period is limited to the reopening of closed beds to bring the bed complement up to 76.

Tibnine

The proposed increase in bed complement to 65 is contingent on the release of space presently occupied by UNIFIL forces and will enable the hospital to meet 100% of the assessed need for community-level beds.

Nabatiyeh

In the first instance it is proposed that the existing public hospital project, based on the conversion of a local school building, be completed and brought into operation at what we estimate to be its optimum bed complement, namely 55 beds. This is more than our short-term strategy indicates as the minimum need but makes sense of the existing building and enables a 30% provision of public beds to be achieved. In the longer term increased public provision within the area can be justified, but the distribution of such increase between Nabatiyeh and Marjayoun will need to be assessed in the light of local population movement and the utilisation of public health facilities.

Marjayoun

As explained above the expansion of the Marjayoun hospital is contingent on other developments and cannot be accorded a high priority. In the meantime the bed complement should be maintained at its present level.

Hasbaya

The proposal to develop a community hospital here is the subject of a separate report. The recommended provision of 50 beds is based on meeting 100% of the assessed need for community-level beds.

6.0 PROPOSALS

The hospital-by-hospital proposals for development detailed here are based on the public hospital construction programme described in the previous chapter. Bed complements (given in total only in the construction programme) are allocated to individual specialties in this chapter. The allocations reflect the proportions of the proposed specialty bed index. This means that in hospitals whose bed complement is intended to meet only a proportion of the assessed total requirement, (for example, 30% in the case of the Sidon hospital), the individual specialties will be allocated beds to meet the same proportion of total need. In the case of acute psychiatry it can be argued that the public hospitals ought to be planned to meet 100% of the need, since it is unlikely that either the patients or their insurance companies will wish to pay for such cases in the private sector. However, since the introduction of acute psychiatry to South Lebanon will in itself be a major change in provision, we propose that the scale of the provision should be limited in the first instance to the figures resulting from the policy of partial provision. Expansion of the service to cover the whole of the need can occur subsequently if the initial operations are successful.

6.1 Sidon Regional Hospital

Detailed development proposals for the new regional hospital at Sidon are the subject of a separate report. The proposed bed complement of 250, to meet 30% of assessed needs at qada, area, and regional levels in 1988, are to be allocated to specialties as follows.

Community Beds

Medicine	33
Surgery	29
Paediatrics	41
Obstetrics	35
Gynaecology	17

Area Beds

Orthopaedics	21
Psychiatry	17

Regional Beds

ENT	12
Ophthalmology	10
Tertiary Specialties	35
TOTAL BEDS	250

The construction programme envisages the possibility of further construction, by 1993, to bring the bed complement up to 300.

6.2 Jezzine

As explained in the previous chapter, the needs of the Jezzine qada for community level beds will be met by the new Sidon Hospital. Therefore the existing public hospital at Jezzine will not be required, at least so far as inpatient services are concerned. However, Jezzine does need the services of a health centre, and in the absence of a community hospital the centre would need to provide accommodation for visiting hospital-based specialists to conduct outpatient clinics. The existing building would be eminently suitable for conversion to this changed function - more suitable in fact than for continued use as a hospital. The building provides a total departmental area of about 780 square metres (see Appendix 2), twice that proposed for the 4-GP health centre at Shebaa in our report on health services for the Hasbaya qada.

It is likely therefore that the building at Jezzine could accommodate comfortably up to six GPs, plus visiting specialists and such supporting services as prove necessary.

It is not possible to develop this idea in any greater detail in the absence of a comprehensive plan for the provision of primary care services in the qada as a whole. As with the proposals for Hasbaya, such a plan would need to be based on a detailed understanding of the geographical distribution of the population, its epidemiology, and the nature of existing health services and personnel. This would enable proposals for the scope and scale of services to be provided by particular facilities to be developed in context, so that appropriate specifications for the renovation and conversion of the building at Jezzine can be established. The same considerations apply to the development of primary care services in the other qadas of South Lebanon.

6.3 Nabatiyeh Area Hospital

It is proposed that in the first instance the partially executed hospital conversion at Nabatiyeh should be completed and opened to provide a bed complement of 55. These beds which will meet 30% of assessed needs in 1988 should be allocated to specialties as follows.

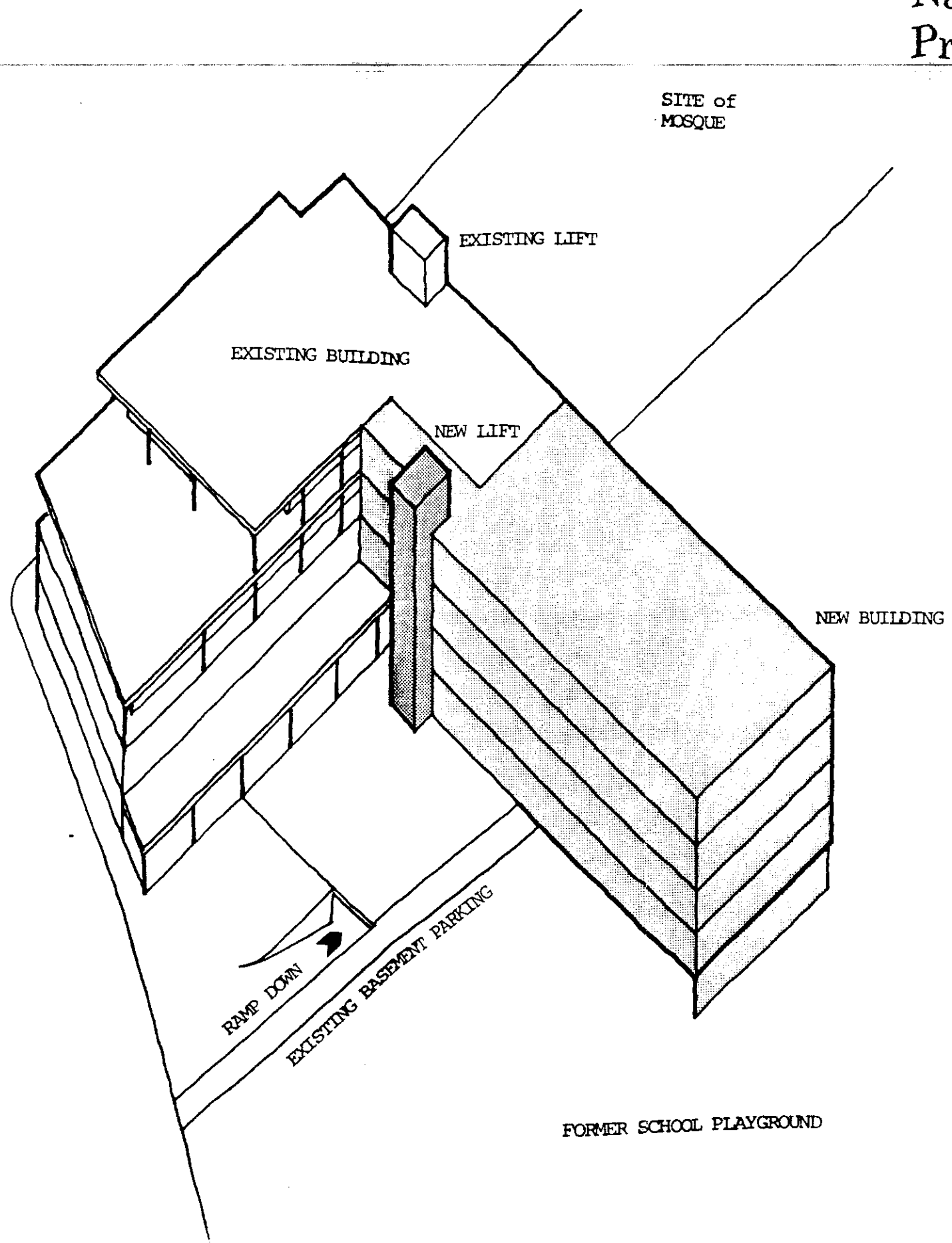
Community Beds

Medicine	8
Surgery	7
Paediatrics	10
Obstetrics	8
Gynaecology	4

Area Beds

Orthopaedics	10
Psychiatry	8
TOTAL BEDS	55

Nabatiyeh Hospital
Proposals for Expansion



Clearly such a bed distribution involves creating a number of rather small inpatient units. The construction programme envisages the possibility of expansion, between 1988 and 1993, to increase the number of beds provided at Nabatiyeh and Marjayoun, taken together, by about 75. This would enable the bed complement of the Nabatiyeh hospital to be increased to about 90 beds in he 1988-1993 period, so as to provide 50% of the total assessed need for beds at qada and area level, as proposed in Chapter 5. An extension to accommodate the necessary 35 additional beds, together with accompanying increases in some of the supporting departments, will require an area of about 1800 square metres. This could be provided in the form of a four-storey extension to the existing building on the former playground, as shown in Figure 4. Two floors would be used to accommodate the additional beds, and two for increases in the areas of supporting departments.

The size of this extension has been assessed on the basis of the space standards established for the Hasbaya community hospital. The functional brief for Hasbaya provides a nett area of 52 square metres per bed, in relation to 50 beds. Additional beds would not require as much space since some departments would not need to be expanded pro-rata. Our assessment is that about 39 square metres per bed would be sufficient to accommodate additional beds plus increases in the areas of those departments that may have to be extended to support increased workloads. In addition to this an allowance of 35% of the nett area must be added to allow for departmental circulation space. In relation to an additional bed complement of 35 this generates a departmental floorspace requirement of 1800 square metres, of which about half would be required for the actual wards themselves. It should be noted that such an extension will not make good any deficiencies in space provisions already existing in Nabatiyeh in relation to its exisitng bed complement. However, we believe such existing shortfalls are less serious at Nabatiyeh than they are in any of the other public hospitals in South Lebanon.

If the site proposed for this extension proves not to be available consideration will need to be given to relocating the entire hospital to the site reportedly allocated for public hospital development on the outskirts of Nabatiyeh.

6.4 Marjayoun Community Hospital

The existing complement of 46 beds should be brought up to 50 to conform with intended Government regulations and allocated to specialties in the same proportion as Hasbaya - see Table below.

Medicine	11
Surgery	9
Paediatrics	13
Obstetrics	12
Gynaecology	5
TOTAL BEDS	50

As noted above, expansion of the Marjayoun Community Hospital is not likely to be required until the second quinquennium and will need to be planned in co-ordination with the expansion of the Nabatiyeh Area Hospital. On the assumption that a total of 75 additional beds will be required between Marjayoun and Nabatiyeh in 1993, then an extension providing 40 beds will be needed at Marjayoun. This involves virtually doubling the bed complement of the existing hospital, and will require the expansion of most of the supporting departments, many of which are themselves seriously underprovided with space even for their current workloads.

Our outline proposals for the provision of the necessary additional space are shown in Figure 5. The extension takes the form of a substantial three-storey building located to the south of the existing hospital on a vacant area of the existing site. The building will provide a total of approximately 3300 square metre of departmental space - more than double the present hospital area. This will be used as follows.

The top two floors, L-shaped in configuration, will accommodate the entire bed complement of approximately 90 beds, enabling the existing wards to be vacated for other purposes. The lowest level, sited so as to take advantage of the east-west slope on the site, will accommodate new service departments such as the kitchen, laundry, and stores, again vacating space in the existing buildings.

The existing building will be used to accommodate the entire outpatient department and pharmacy, (releasing the existing free-standing outpatient block for other functions such as maintenance workshops), together with much expanded space for the medical records, x-ray, laboratory, surgical suite and delivery departments.

The new and existing buldings will be linked together by a new three-storey lift tower so as to perform as a single, integrated hospital facility.

The size of the extension has been determined, like that at Nabatiyeh, on the basis of the space standards established for the Hasbaya community hospital. The additional beds, and associated extensions to existing support departments, have been programmed on the basis of an allowance of 39 square metres of nett area per bed. This gives a departmental area of about 2400 square metres, including a 35% allowance for circulation. However, in addition to this there is a need to make good the more pressing shortfalls in space in relation to the present bed complement; we estimate that at least another 900 square metres of departmental area is needed to achieve this, resulting in a total departmental area of new construction of 3300 square metres.

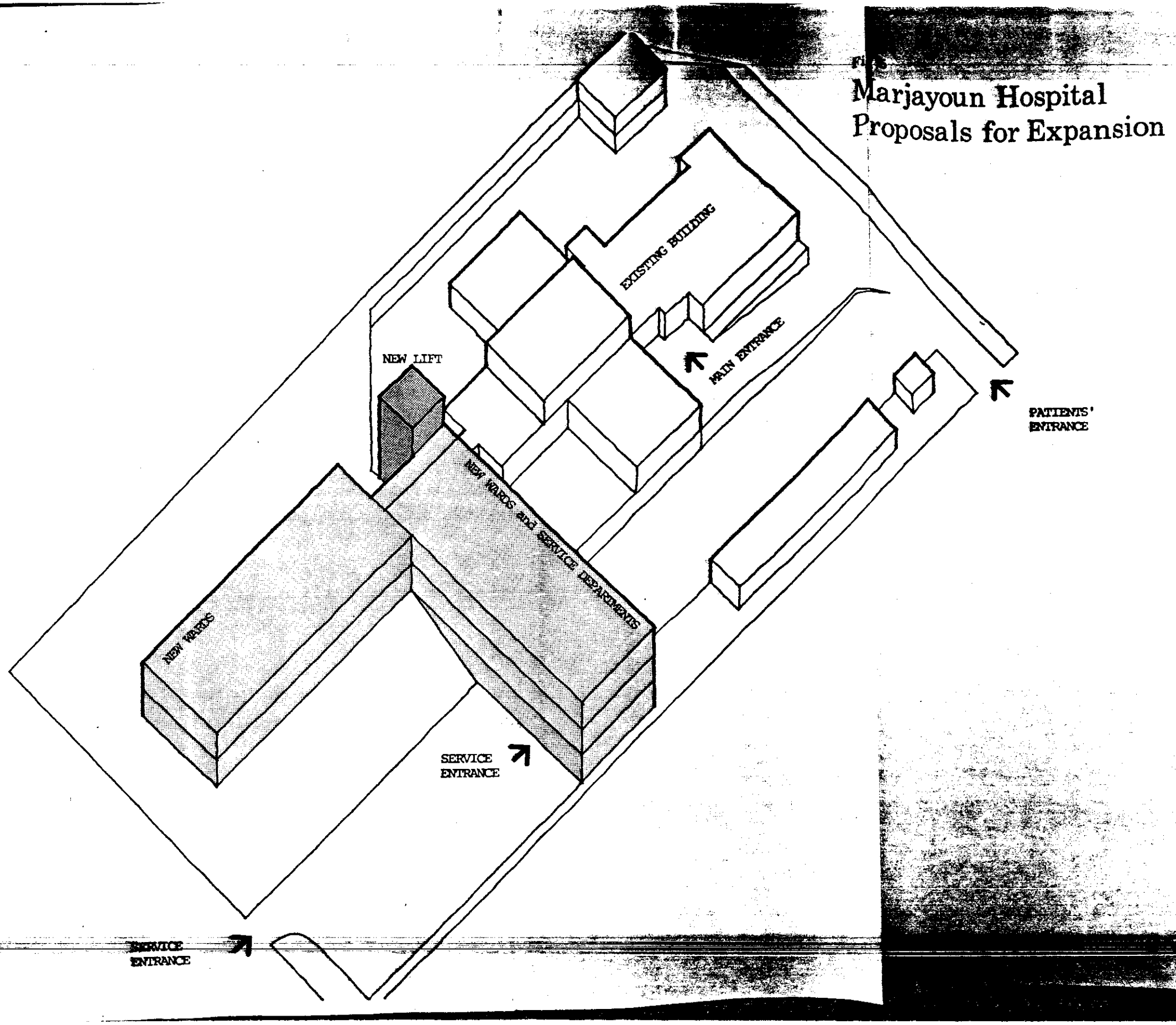
6.5 Hasbaya Community Hospital

As noted earlier the development of the Hasbaya community hospital is the subject of a separate report. However, the allocation to specialties of the proposed 50-bed complement is given below, such beds being intended to meet 100% of the assessed need for community-level beds and no early requirement for expansions being foreseen.

Medicine	11
Surgery	9
Paediatrics	13
Obstetrics	12
Gynaecology	5
TOTAL BEDS	50

fig. 8

Marjayoun Hospital
Proposals for Expansion



6.6 Tyre Area Hospital

In the first instance the bed complement of the existing hospital should be brought up to 76 by re-opening the 20-bed ward that has been closed in response to difficulties of staffing and supply. This increased bed complement should then be re-allocated between specialties as follows.

Community Beds

Medicine	12
Surgery	11
Paediatrics	16
Obstetrics	13
Gynaecology	6

Area Beds

Orthopaedics	10
Psychiatry	8
TOTAL BEDS	76

Subsequently, and depending on the extent to which population growth and migration conform to our projections, we have proposed that a new hospital be constructed to replace the existing hospital, with a complement of 210 beds. No detailed proposals for this hospital can be made in this report, no site having yet been selected for its construction.

6.7 Tibnine Community Hospital

Tibnine hospital is a community hospital serving the qada of Bint Jbail. The 65 beds proposed as its bed complement to meet 100% of the local need for community beds should be allocated between specialties as follows:

Medicine	14
Surgery	12
Paediatrics	17
Obstetrics	15
Gynaecology	7
TOTAL BEDS	65

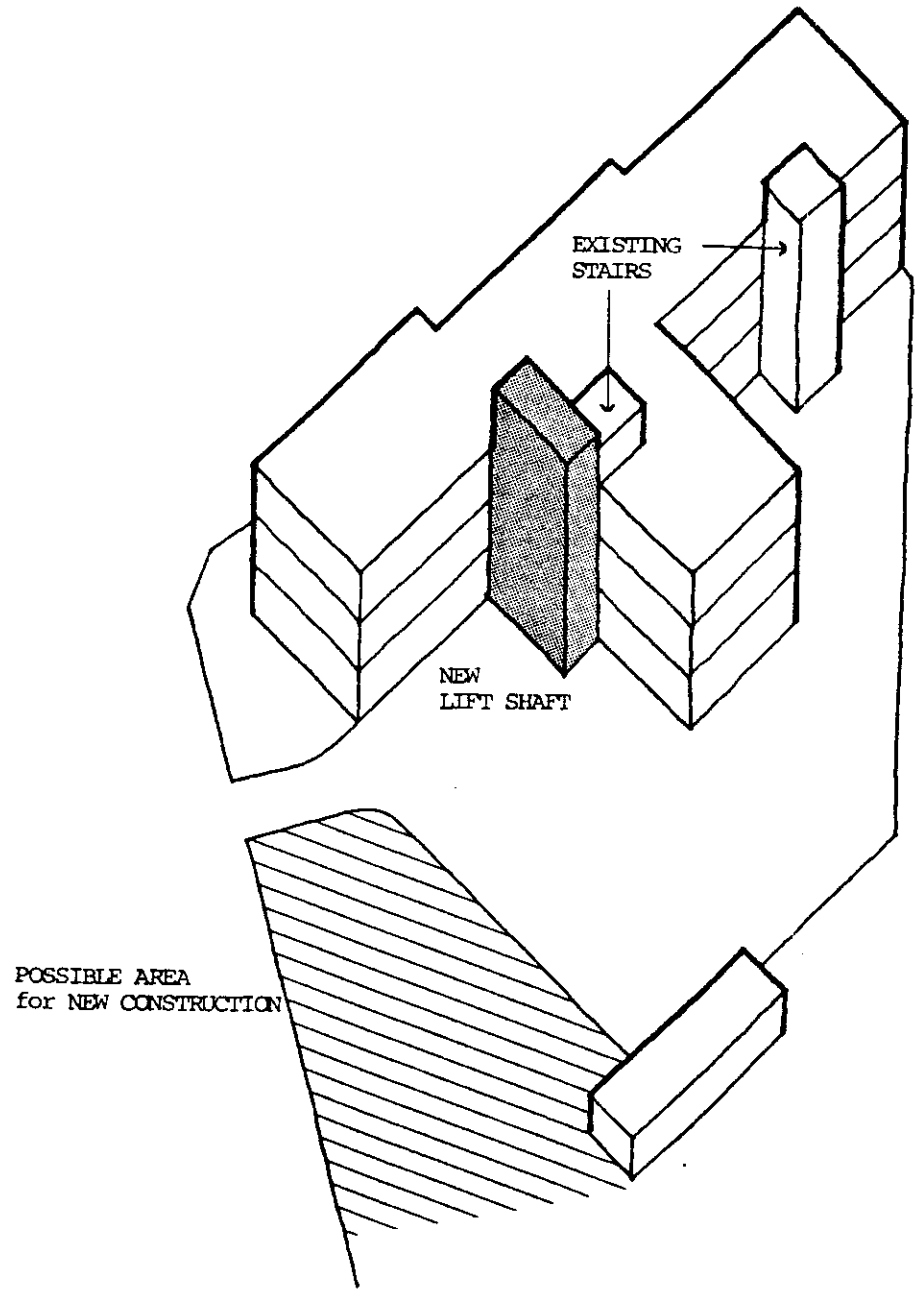
Although, within the time scale of this plan, there is no need to provide for any further increase in the bed complement, there are some shortcomings in the space provision at Tibnine, both in terms of quantity and quality.

The principal problem is the absence of a lift which means that some inpatients have to be physically carried between the ground and first floor levels, and others have to walk when it would be more appropriate to move them on wheelchairs or trolleys. Furthermore the movement of material is made unnecessarily difficult by the absence of powered vertical transportation. We propose that a new lift tower should be constructed, as shown in Figure 6, and should be equipped with one lift large enough to take a stretcher trolley, but to be used by staff and supplies/disposal traffic as well.

So far as space shortages are concerned we believe there is a limit to the extent to which extra space can be provided given the configuration and siting of the existing building. Extra space could be created at the lower ground level by decanting the laundry and stores into a separate building (see Figure 6) which would enable outpatient, administrative and diagnostic function to be expanded. However, provison of additional space for the inpatients, surgical suite and delivery suite would mean radical reconstruction of the hospital which does not seem to us to be justifed at present.

Fig 6

Tibnine Hospital
New Lift Shaft



7.0 COST OF THE PLAN

This section gives estimates of the capital and operating cost of each of the hospital projects listed in the construction programme given earlier, the results being summarised in the table at the end of the Section. As with the estimates of staffing requirements and costs given earlier, a distinction is drawn in this section between costs attaching to developents to be complemented by 1988, and those of development to be implemented between then and 1993.

Sidon Regional Hospital	
1988 Costs	
Capital	
Building design and construction: 24 250 sq.m @ LL 4 950 per sq.m	120 037 500
Equipment	21 875 000
Total	141 912 500
Annual Operating	
Staff	23 446 800
Other costs @ 50% of staff costs	11 723 400
Total	35 170 200
1993 Costs	
Capital	
Building design and construction 3 640 sq.m LL 4 950	18 018 000
Equipment	4 375 00
Total	22 393 000
Annual Operating	
Staff	28 136 200
Other Costs @ 50% of staff costs	14 068 100
Total	42 204 300

Nabatiyeh Area Hospital	
1988 Costs	
Capital	
Building design and construction (assumed already funded)	nil
Equipment	4 235 000
Total	4 235 000
Annual Operating	
Staff	4 320 700
Other costs @ 50% of staff costs	2 100 400
Total	6 481 100
1993 Costs	
Capital	
Building design and construction 2 160 sq.m @ LL 3 750 per sq.m 600 sq.m renovation @ LL 600 per sq.m	8 460 000
Equipment	2 695 000
Total	11 155 000
Annual Operating	
Staff	7 070 300
Other costs @ 50% of staff costs	3 535 100
Total	10 605 400

Marjayoun Community Hospital	
1988 Costs	
Capital	
Building design and construction (none programmed)	nil
Equipment	nil
Total	nil
Annual Operating	

Staff	3 548 200
Other costs @ 50% of staff costs	1 774 100
Total	5 322 300

1993 Costs

Capital	
Building design and construction: 3 960 sq.m @ LL 3 750 per sq.m 1200 sq.m renovation @ LL600 per sq.m	15 606 000
Equipment (re-equipment for 90 bed total)	6 300 000
Total	21 906 000
Annual Operating	
Staff	6 386 700
Other costs @ 50% of staff costs	3 193 300
Total	9 580 000

Hasbaya Community Hospital

Capital	
Building design and construction 3 780 sq.m @ LL 3 750 per sq.m 535 sq.m renovation @ LL600 per sq.m	14 496 000
Equipment	3 500 000
Total (including cost and commissioning consultants)	17 996 000
Annual Operating	
Staff	3 548 200
Other costs @ 50% of staff costs	1 774 100
Total	5 322 300

Note: See "Health Planning for South Lebanon: Hasbaya" for full details

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Tyre Area Hospital

1988 Costs

Capital

Building design and construction (none programmed)	nil
Equipment	nil
Total	
Annual Operating	
Staff	5 875 200
Other costs @ 50% of staff costs	2 937 600
Total	8 812 800
1993 Costs	
Capital	
Building design and construction 17 850 sq.m @ LL 44 950 per sq.m	88 357 500
Equipment	16 905 000
Total	105 262 500
Annual Operating	
Staff	16 234 100
Other costs @ 50% of staff costs	8 117 100
Total	24 351 200

Tibnine Community Hospital

1988 Costs	
Capital	
Building design and construction (new lift shaft)	500 000
Equipment	nil
Total	500 000
Annual Operating	
Staff	4 698 100
Other costs @ 50% of staff costs	2 349 100
Total	7 047 200
1993 Costs	
Capital	

Building design and construction	nil
Equipment	
Total	nil

Annual Operating

Staff	4 698 100
Other costs @ 50% of staff costs	2 349 100
Total	7 047 200

Summary of Capital Costs (including equipment)

Hospital	1983-88	1988-93
Sidon	141 912 500	22 393 000
Nabatiyeh	4 235 000	11 155 000
Marjayoun	nil	21 906 000
Hasbaya	17 996 000	nil
Tyre	nil	105 262 500
Tibnine	500 000	nil
TOTAL	164 643 500	160 716 500

Summary of Annual Operating Costs

Hospital	1983-88	1988-93
Sidon	35 170 200	42 204 300
Nabatiyeh	6 481 100	10 605 400
Marjayoun	5 322 300	9 580 000
Hasbaya	5 322 300	5 322 300
Tyre	8 812 800	24 351 200
Tibnine	7 047 200	7 047 200
TOTAL	68 155 900	99 110 400

APPENDIX 1

PRIVATE HOSPITALS IN SIDON

	HARIRI	HAMMOUD	CHEHEIB	LABIB	ALAEDDIN	DALAA	ELIAS ELIAS	NAKEEB	ASSAF	OSSEIRANE	MAAMARI	HAJJ	SHABB	KHOURY	NAJN
No of beds available	340	162	150	75	64	75	40	36	23	63	8	15	16	13	14
No of beds used	340	162	150	75	64	75	40	36	23	63	8	?	16	13	6
By spec:															
Gen Medical	Y	44	Y	Y	Y	-	Y	Y	Y	Y	-	?	-	-	-
Gen Surgery	Y	47	Y	Y	Y	-	Y	Y	Y	Y	-	?	16	-	6
Obs & Gyn	Y	22	Y	Y	Y	50	Y	Y	Y	Y	8	?	-	-	-
Paediatrics	Y	29	Y	Y	Y	25	Y	Y	Y	Y	-	?	-	-	-
Others	Y	40	Y	Y	Y	-	-	Y	Y	Y	-	?	-	13	-
By type:															
Suites	?	?	4	6	-	8	?	?	?	?	-	?	-	-	?
1st Class	?	?	16	12	14	21	?	?	?	?	1	?	5	4	?
2nd Class	?	?	50	18	25	22	?	?	?	?	4	?	3	9	?
3rd Class	?	?	80	39	25	24	?	?	?	?	3	?	8	-	?
MoH Beds	Y	8	10	10	7	7	10	10	7	7	-	-	-	-	-
X-Ray	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	Y	N	N
Laboratory	Y	Y	Y	Y	Y	Y	N	Y	Y	N	N	N	N	N	N
Full-time MOs	?	10	4	5	3	5	1	3	1	6	1	1	1	1	1
Part-time/ contract MOs	?	33	30	26	12	27	?	10	11	-	1	?	1	-	3
Qualified Nurses	?	40	10	14	8	17	?	4	-	4	-	?	1	-	-
Unqualified Nurses	?	121	35	?	9	23	7	10	6	6	4	?	?	2	2
Inpatients per month	?	800	800	400	120	?	?	?	?	?	50	?	100	10	10
Operations per month	?	270	250	240	?	120	40	70	120	?	-	?	100	10	10
Deliveries per month	?	180	20	50	?	200	?	?	?	?	50	?	-	-	-
Additional beds under construction	-	-	25	-	20	55	-	-	-	-	-	-	-	-	-
Additional beds under consideration	-	150	-	-	-	-	-	-	-	-	-	?	-	-	16

Y indicates that the service is present
N indicates that the service is not present
? indicates information not known
- indicates zero

APPENDIX 2

GOVERNMENT HOSPITALS IN SOUTH LEBANON, 1983

This report covers the six government hospitals in South Lebanon at Sidon, Jezzine, Nabatiyeh, Marjayoun, Tyre and Tibnine. Each section is organised in terms of an introduction, a description of the site, a description of the buildings and finally a review of any current plans for future development.

Estimates of the floorspace provided by each hospital have been made on the basis of the best information available. However, very little hard data was made available to us. In most cases the drawings given here and the areas taken from them are based on no more than site photographs and sketches, approximate survey dimensions taken on site and occasionally, photographs of architectural drawings. Therefore, although the site plans are notionally to a scale of 1:500 and the internal layouts to a scale of 1:200, the drawings should not be scaled. Exceptions to this observation are the 1:200 layouts of Nabatiyeh, taken from 1:50 scale electrical and architectural layouts supplied by the architect and the 1:1000 scale site plan of Saida, taken from a recent 1:500 scale site survey supplied to us by UNICEF.

SIDON

The team visited Sidon on 9 July 1983. Drawings of the main building were available for inspection only and were photographed. A small number of site survey dimensions were recorded and sketches made. Subsequently a copy of a recent site survey was supplied to us by UNICEF. Before the Israeli invasion the hospital reportedly contained about 130 beds. However the main building was badly damaged during the fighting and the hospital is now operating only an outpatient service although 30 beds are available for use in the outpatient building. The site is illustrated in Figure 1 and the aproximate internal layouts of the buildings are shown in Figures 2 to 7 inclusive.

Site

The total area owned by Government is extensive. However, the existing hospital is confined to the north-west corner. The majority of the remainder of the site has been taken over for refugee housing although there remains a large vacant area due south of the existing hospital. The site slopes downwards from east to west.

Buildings

The hospital comprises a five storey main block and a three storey outpatients block. There are also two guardrooms and a house on that part of the site occupied by the hospital.

The hospital buildings appear to date from the mid 1950s and are of similar construction to the hospitals at Jezzine and Tyre - loadbearing masonry external walls with reinforced concrete frame internal structure. Floors appear to be two-way spanning with downstand beams. Partitions are plastered concrete blockwork. Floor finishes are generally terrazo tile. The heating system, which is not working, feeds hot water cast-iron radiators. The main building contains a staircase and two lifts, one reportedly large enough for bed movement, while the outpatient block contains a staircase and one lift.

The north wing was not damaged during the hostilities but nevertheless only the ground floor level is currently in use as is part of the ground floor of the main block. This is the only undamaged part of the main block which elsewhere has suffered extensively as described below.

Artillery fire has punched many openings in the south and east faces of the building and destroyed many internal partitions. Gunfire and conflagration within the building have added to the damage. Surprisingly the concrete frame has retained its overall integrity although there are a number of columns requiring replacement and some floor and roof panels are on the point of collapse possibly as a result of thermal damage, and some of the remaining panels of the external wall are also about to collapse. None of the mechanical and electrical systems are working except those in the small occupied area on the ground floor.

In principle it is possible to repair the main block but it must be appreciated that the costs of doing so will approach the costs of constructing a new building to equivalent standards and of identical area. This aspect of the project has been the subject of analysis on the basis of the extent of repair required to bring the building back into use, summarized below.

Structure	- Substructure	NIL
	Frame	20%
	Floors and roof	10%
	External Wall (excluding windows)	30%
	Windows	70%
Space Division	- Partitions	30%
	Doors	70%
Finishes	- Floor	20%
	Walls and Ceilings	100%
M & E Installations	- Lifts	100%
	Electrics	100%
	Heating and Plumbing	30%

The cost of replacing the existing building with a new structure accommodating the same functions is estimated at approximately $5,000,000. Against this, the cost of achieving the repairs to the existing building listed above will be approximately $3,000,000. These figures exclude the costs of replacing medical equipment which will be identical in both cases.

The cost of repair may need to be augmented to allow for the extra costs of achieving any changes required in the use and subdivision of space to improve the usefulness of the building. Radical changes in the subdivision are not possible because of the closely spaced column grid (which may have protected the building from more extensive damage). The question arises, therefore, as to whether the main block is worth renovating for hospital purposes and if not, whether some other use, for example, residential accommodation for staff or teaching accommodation, would be more suitable. These points are addressed in the main text of this report.

As they stand the two hospital buildings together provide a total gross area of approximately 4600 sq m, including plant rooms, stairs, lifts and basements. On the basis of an original bed complement of about 130 beds this gives a gross area of 35 sq m per bed, or a probable departmental area per bed of 29 sq m.

Future Plans

It is intended, as an immediate short-term measure to construct a 110-bed prefabricated hospital on the vacant site south of the existing hospital. This project is being organized and funded by USAID. Although intended as a temporary expedient it may be that the buildings will be of sufficiently durable qualities to allow them to be integrated into the future development plan for Sidon. The space programme for the project provides a departmental area of 4950 sq m, that is 45 sq m per bed. The proposals for functional content and area made in the programme for the temporary hospital are the subject of further comment in the main text of this report.

We have also been made aware of plans to renovate the basement area of the existing outpatient block to provide a dialysis unit.

JEZZINE

The team visited Jezzine on 9 July 1983. No drawings were available but subsequently photographs of building plans were made in the Ministry of Health. A small number of building dimensions were checked on site. The overall site plan is shown in Figure 8 and approximate layouts of the buildings are given in Figures 9 and 10. Jezzine is a 25-bed hospital currently providing an outpatient service only.

Site

The site is triangular in shape with the buildings running north-south along the western boundary. There is a fairly steep slope downwards from west to east towards the local river, but there is plenty of room for expansion if required.

Buildings

There are two buildings on the site. The main building is a mixture of single and two-storey construction, reportedly built in 1954. The second building, a dispensary, is comparatively modern.

The structure of the main building is composite with loadbearing external masonry walls and some internal framing in reinforced concrete. It was not clear whether any of the internal partitions are also loadbearing. Floor finishes are generally terrazo tile and walls and ceiling are painted render and plaster. There are two staircases in the building but no lift. The buildings are generally in reasonable condition in spite of some war damage, now repaired, and have recently been redecorated. The accommodation is arranged as follows:

Ground Floor - South Wing - X-ray
Pharmacy

North Wing - 15-bed ward, not in use. Two rooms for outpatients.

East Wing - Emergency room and director's office plus laundry and kitchen not use.

First Floor - South Wing - 10-bed ward, not in use. Staircase access only.

East Wing - Not in use. To be renovated as doctor's sleeping quarters.

There is a basement to part of the main building which was not inspected. Neither was the dispensary inspected.

The main building provides a total departmental area (excluding stairs, entrance hall and basement) of approximately 780 sq m, an area of 31 sq m per bed.

NABATIYEH

The team visited Nabatiyeh on 14 July 1983. No drawings were available at the time but a subsequent meeting with the architect produced a set of 1:50 scale electrical layouts giving accurate building dimensions. Plans were subsequently obtained of the floor layouts, which confirmed the data extracted from the electrical layouts and added some more detailed information. Since the building is not in use, its conversion from a school to a hospital having been interrupted by the war, some of what follows is surmise based on visual inspection of the buildings and drawings. The four above-ground levels of the building are shown in Figures 11, 12, 13 and 14. There is also a basement area which was not inspected but is to be used for engineering plant rooms, storage and car parking.

Site

The site is in the centre of Nabatiyeh and is bounded by shops, a mosque and an open area that was once the playground/games area of the school. We were not able to determine whether this land was available for expansion.

Buildings

Conversion of the buildings from a school to a hospital remains incomplete and there is some war damage to be repaired. Nevertheless the building could be brought into use in a fairly short space of time. There are four storeys, served by a lift and a staircase. The structure is a reinforced concrete frame and the external finish is sand/cement render and there are some metal strip suspended ceilings.

On the assumption that the conversion is intended to provide reasonable space standards in the patients' bedrooms we estimate the achievable bed complement to be about 55 beds, plus the usual range of outpatient diagnostic, treatment and support functions. These include radiology and operating theatres. The building provides a total departmental area, excluding the basement, staircase and lift, of 1930 sq m which on the basis of 55 beds gives an area per bed of 35 sq m.

MARJAYOUN

The team visited Marjayoun on 14 July 1983. No drawings were available but extensive survey dimensions were taken on site. Subsequently an approximate site plan was made available to us. The internal arrangement of the buildings was recorded in sketch form only. The site plan is shown in Figure 15 and the approximate layouts of the buildings are given in Figures 16 and 17. Marjayoun is a 46-bed hospital and is operational.

Site

The site is approximately rectangular and slopes downwards from west to east across its shorter dimension. The buildings are all located in the northern half of the site leaving the southern half available for expansion if required.

Buildings

There are four buildings on the site which all appear to be of similar age and construction. The main building which is cruciform in shape appears to be of composite construction with loadbearing external walls finished in sand/cement render and has some internal framing in reinforced concrete. The building has one main level which contains the following functions:

Female Ward - 18 beds
Male Ward - 20 beds
Paediatric Ward - 8 beds
Operating Theatres - 2
Laboratory (with own external access)
Kitchen and Staff Dining
Radiology
Emergency
Specialist Outpatients - 3 consulting rooms
Administration.

There is a small amount of accommodation at first floor level containing 6 bedrooms for nurses. The partial basement area contains the main engineering plant room. The building is generally in reasonable condition although there is some evidence of war damage still awaiting repair.

To the east of the main building is a separate single-storey outpatients block providing accommodation for the pharmacy, two general practitioners and the dental suite.

The remaining two buildings are a guardhouse near the main site entrance and a doctors' residence block which also contains two garages and the body store.

The two main buildings provide a total departmental area, excluding the basement plant rooms and all residential accommodation, of 1260 sq m, an area of 27 sq m per bed.

TYRE

The team visited Tyre on 12 July 1983. No drawings were available but sketches were made, photographs taken and major site and building dimensions recorded. The site plan is shown in Figure 18 and approximate internal layouts given in Figures 19 and 20. The hospital is operating with a reduced bed complement of 56 beds, one 20-bed ward being closed.

Site

The site is flat and fairly congested. However, next to it is another parcel of land on which there are the beginnings of what was intended to be a Palestinian hospital. This project was abandoned as a result of the Israeli invasion.

Buildings

The main hospital building was reportedly built in 1952 and is of similar construction to those at Sidon and Jezzine. The outpatient block and the mortuary are of more recent construction and their external walls are of rendered blockwork rather than stone. The buildings are in reasonable condition with no evidence of war damage but as usual are in need of routine maintenance, repair, decoration and cleaning.

The majority of the hospital is single storey with a small area at first floor level and also a partial basement area. The use of space is as recorded below with the exception of the delivery suite which was not located. Block letters are shown on the Figures.

Block A Ground Floor	20 bed ward (closed) Radiology Laboratory
Block A First Floor	Stores Doctors and nurses accommodation (15 beds)
Block B Ground Floor	Paediatric ward Male surgical ward Male medical ward Pharmacy
Block C Ground Floor	Laundry Kitchen and staff dining
Block D Ground Floor	Female surgical ward Female medical ward
Block E Ground Floor	Administration Operating theatres - 2

The approximate total departmental area provided, excluding the basement and the stairs, is 2290 sq m, giving an area per bed, for 76 beds, of 30 sq m per bed.

TIBNINE

The team visited Tibnine on 12 July 1983. No drawings were available and no accurate site dimensions were recorded. The plans given in Figures 21 to 24 must be regarded as very approximate. The building is shared with UNIFIL forces who occupy part of the top floor but the hospital is fully operational with a current bed complement of 35.

Site

The site is small, with no significant room for expansion, and takes the form of a terraced area on a steeply sloping hill.

Buildings

The hospital was reportedly built in 1950 and its exterior was recently upgraded by UNICEF. New horizontal sliding aluminium frame windows have been fitted throughout, the roof covering has been renewed and the external rendering painted. Internally, however, the building is in poorer condition than any of the other hospitals inspected, particularly on the top floor where condensation has stained the walls. This is probably the result of the fitting of tightly sealed windows without the provision of other permanent means of ventilation. The building, which is on three levels, has two staircases but no lift.

The use of space is as recorded below but it should be noted that this will change when the UNIFIL forces move out.

Lower Ground Floor	- Engineering plant Laundry Kitchen Stores including pharmacy store Staff accommodation Administration Mortuary
Ground Floor	- Administration Doctors' accommodation Outpatients Emergency Radiology Laboratory Pharmacy Delivery suite
First Floor, Hospital Sections	- Operating Theatres - 2 Wards - 35 beds

First Floor, UNIFIL Section	- Pharmacy Kitchen 4/5 bed sick bay On-call room Dental surgery Treatment room Doctors' accommodation (3 rooms and WCs)

The approximate total departmental area provided is 2300 sq m. In relation to the present bed complement of 35 this gives an area per bed of 66 sq m. However, when the top floor reverts to normal usage then the bed complement can increase to about 65 giving an approximate area per bed of 35 sq m.

SUMMARY OF AREAS

Hospital	Departmental Area	Gross Area	Area per Bed Dept	Gross
Jezzine	780	-	31	-
Majayoun	1260	-	27	-
Nabatiyeh	1930	-	35	-
Sidon	3830	4600	29	35
Tibnine	2300 approx	2800 approx	35 approx	43 approx
Tyre	2290	-	30	-

GENERAL COMMENTS ON STANDARDS OF ACCOMMODATION

Detailed commentary on spatial shortfalls is provided in the main text of this report. However, two general comments can be made here. Firstly the ward accommodation in many of the hospitals is grossly substandard with even the most basic of supporting work-rooms missing and beds far too close together. Normal hospital wards require 25 to 30 sq m per bed departmental area and this would account for the whole of the available area in some hospitals. This is not to say that the same standards are appropriate to these institutions but nevertheless the shortfall is significant. Another illustration of this is that the total departmental area required for a general hospital built to normal standards is around 75 sq m per bed. The hospitals we have examined provide about half this amount.

Secondly, the arrangement of space often leaves a great deal to be desired. At Jezzine and Tibnine wards located at first floor level are accessible only by staircase, involving the staff in physically carrying patients from one level to another. At Tyre some wards are located so as to form through-routes to other parts of the hospital. Single loaded corridors are often used with the result that accommodation is strung out unnecessarily increasing walking distances for staff and patients. Finally, departments that should be located in easy proximity to one another are sometimes located in different buildings, for example, radiology and general outpatients at Marjayoun. The extent to which such failings can be overcome is addressed in the main text of this report.

Fig A1

Sidon Site Plan

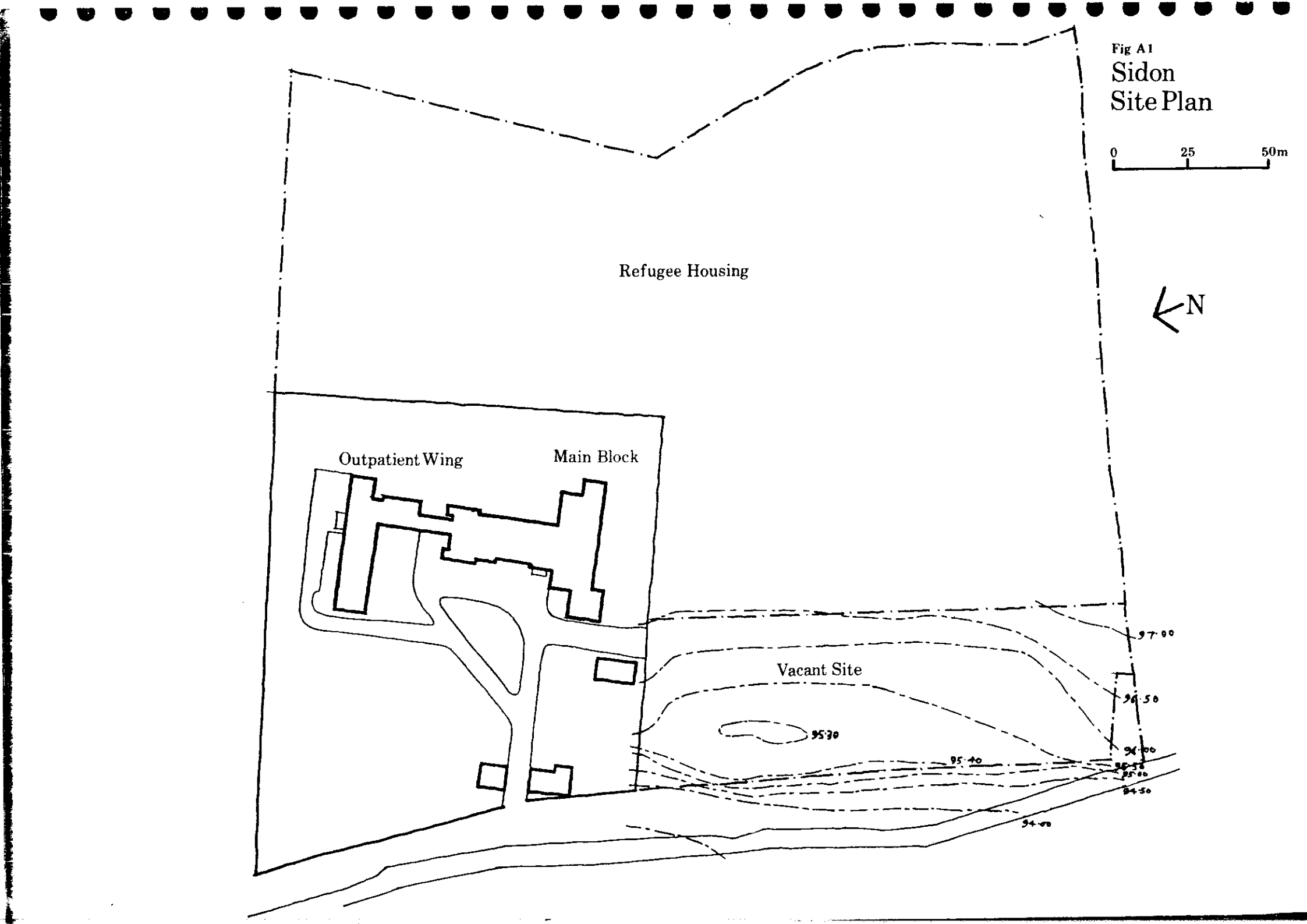


Fig A2

Sidon
Ground Plan

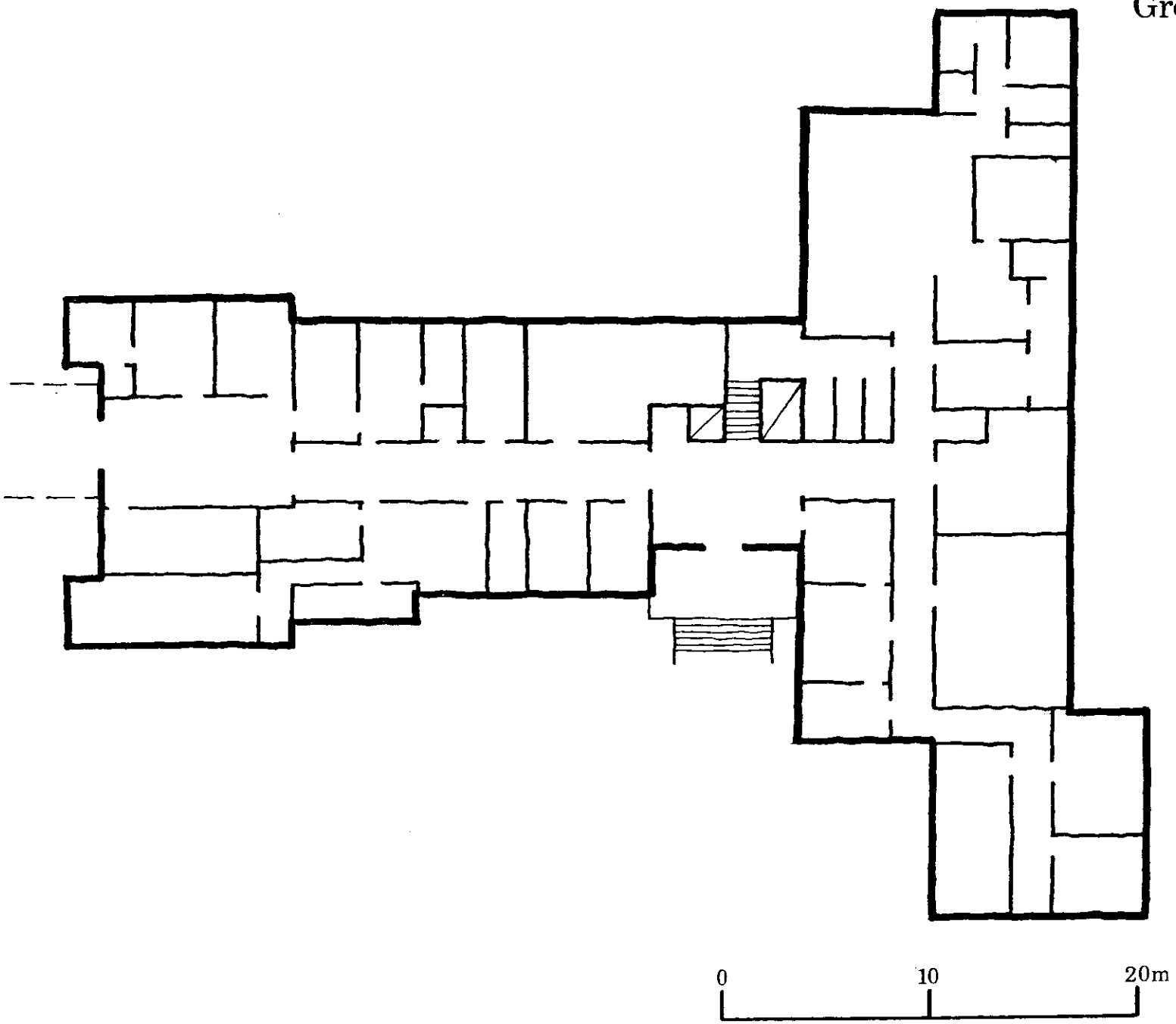


Fig A3

Sidon
First Floor

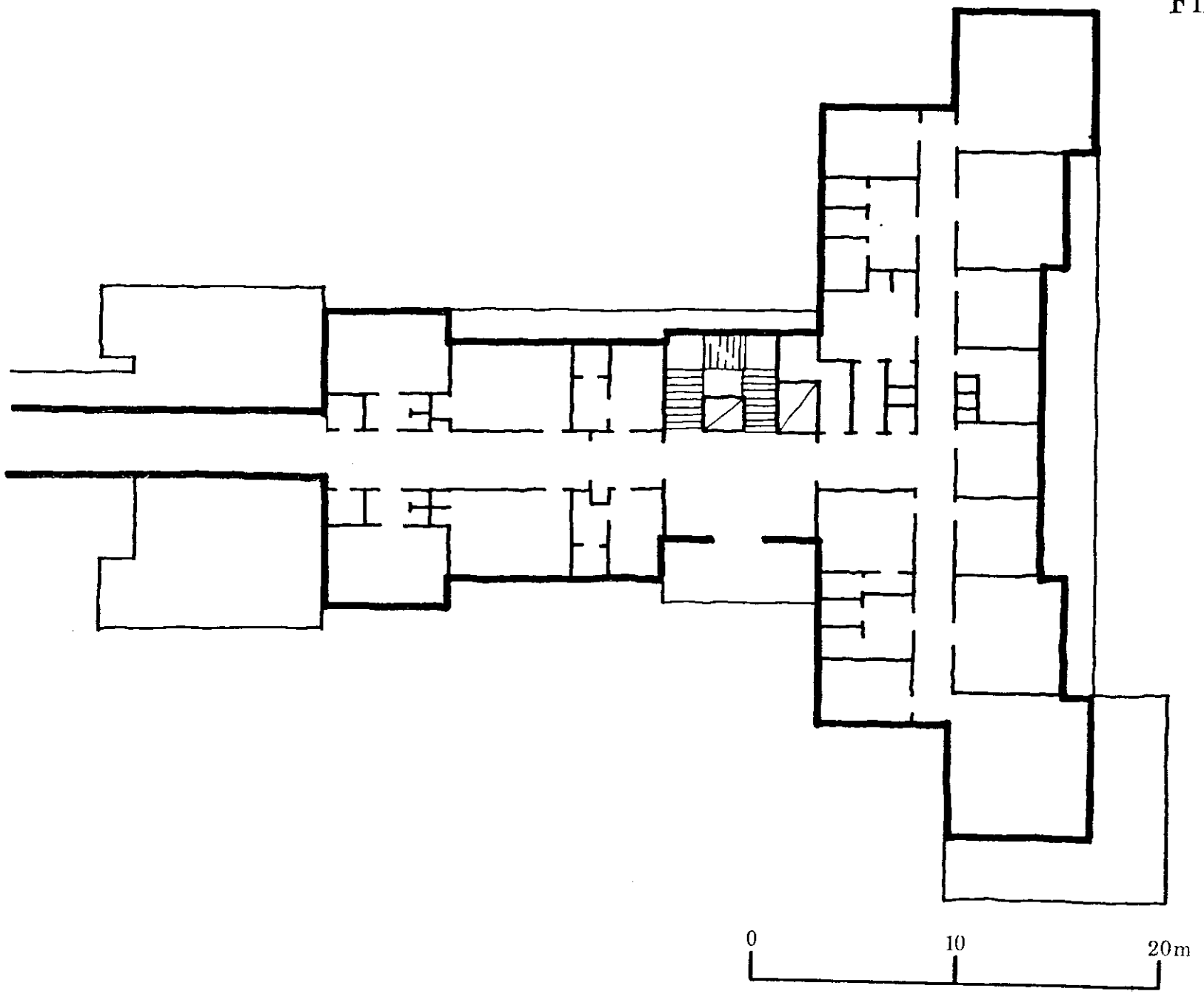


Fig A4

Sidon
Second Floor

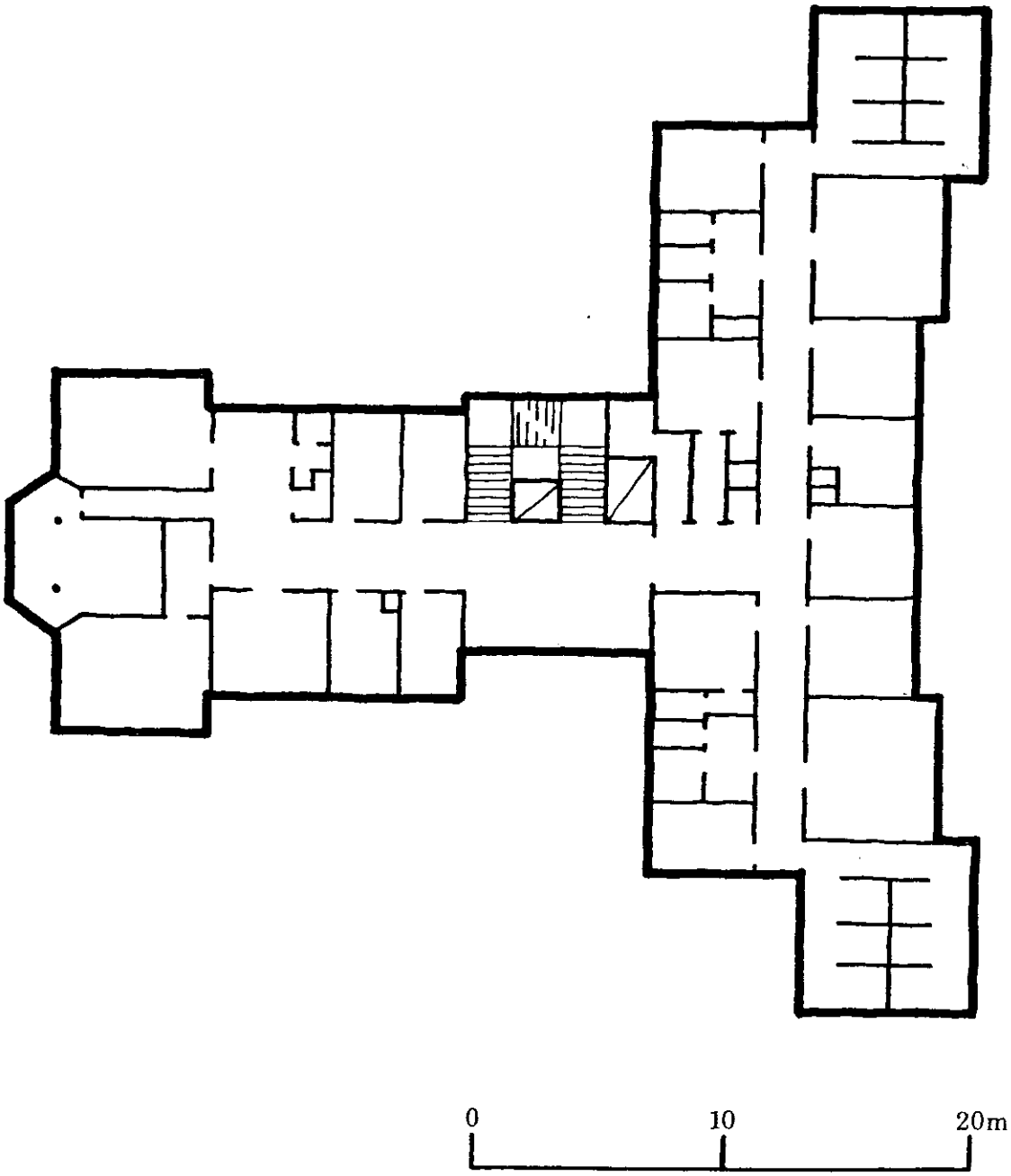


Fig A5

Sidon
Third Floor

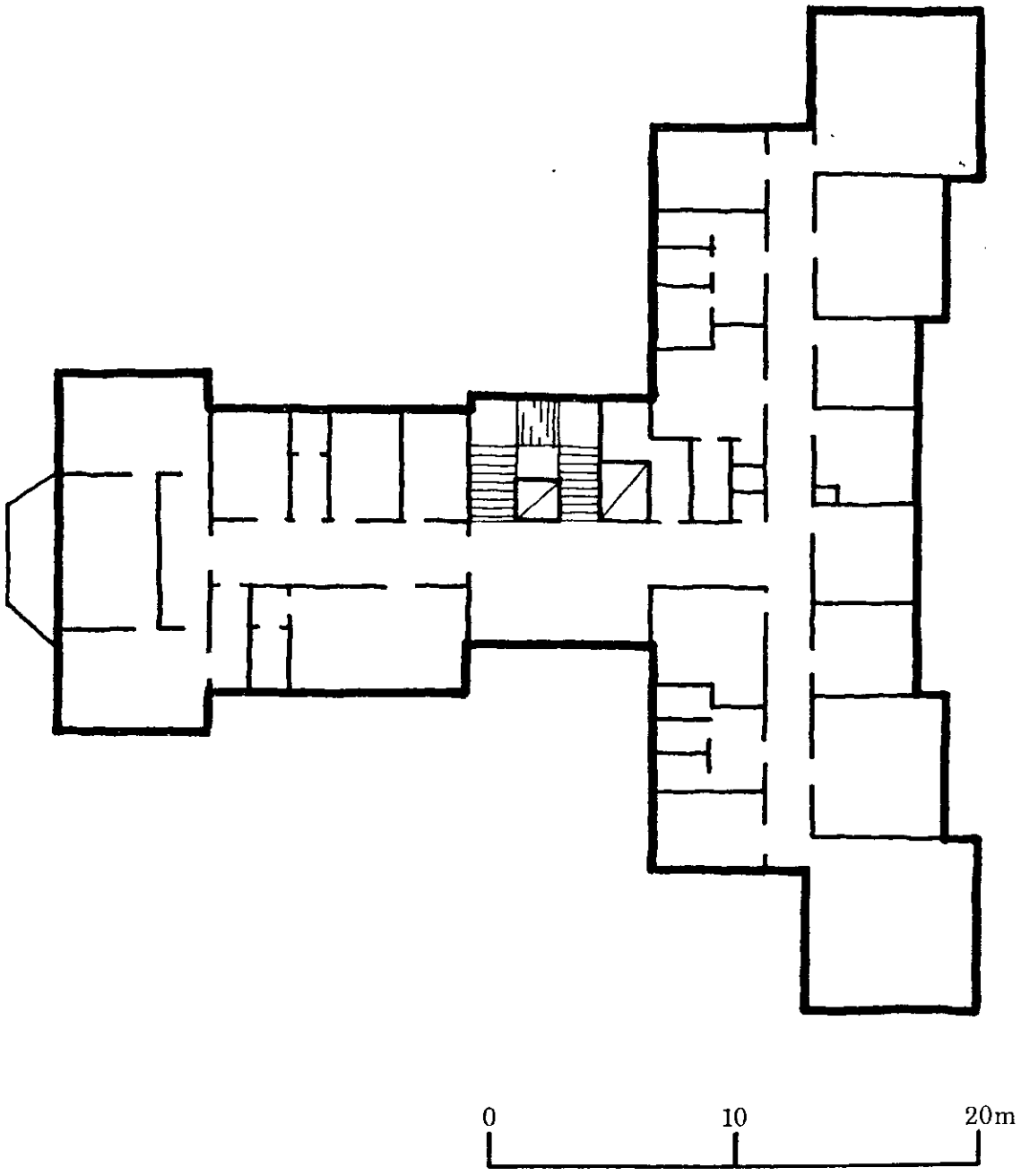


Fig A6

Sidon
Fourth Floor

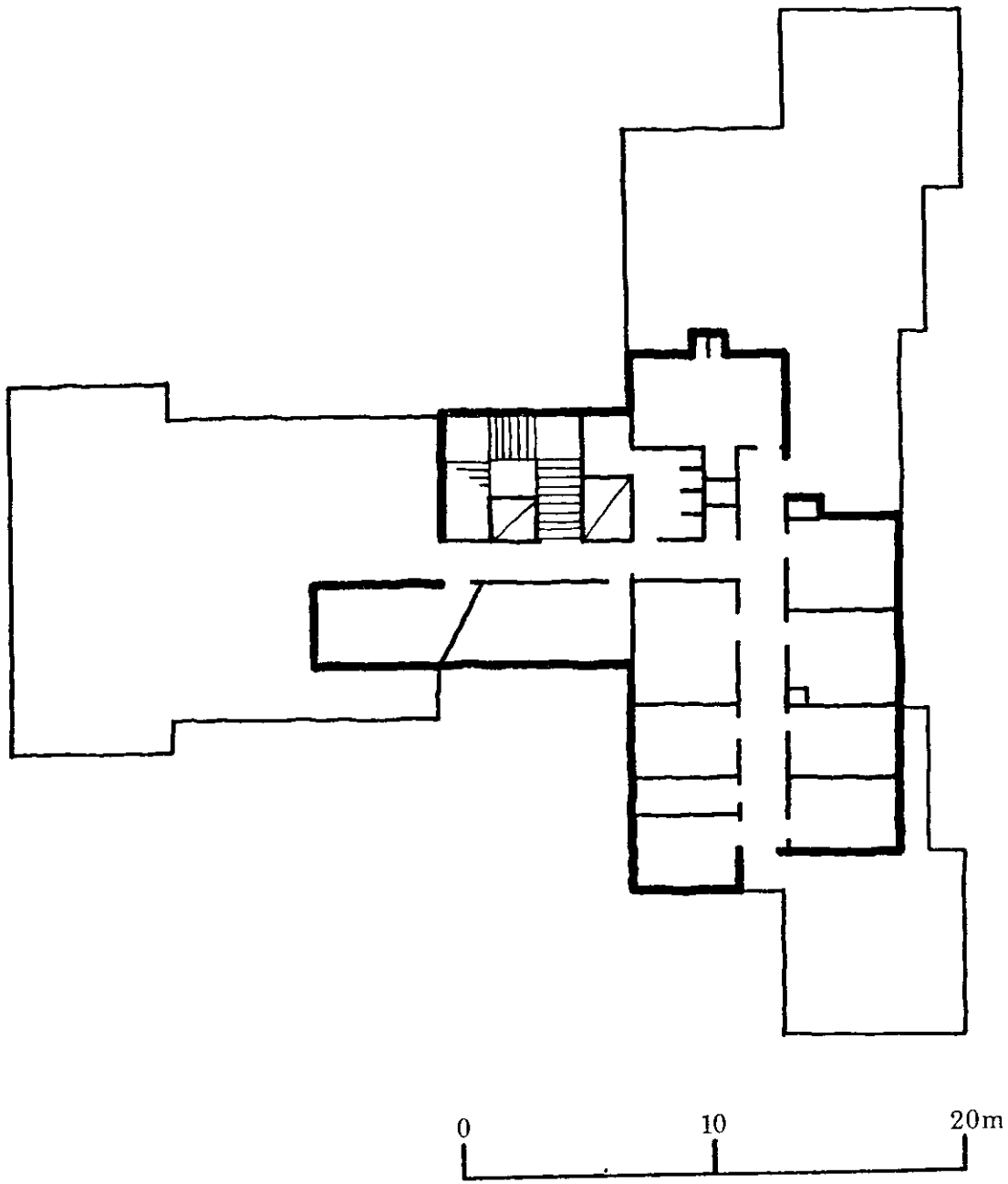


Fig A7

Sidon

Outpatients Wing

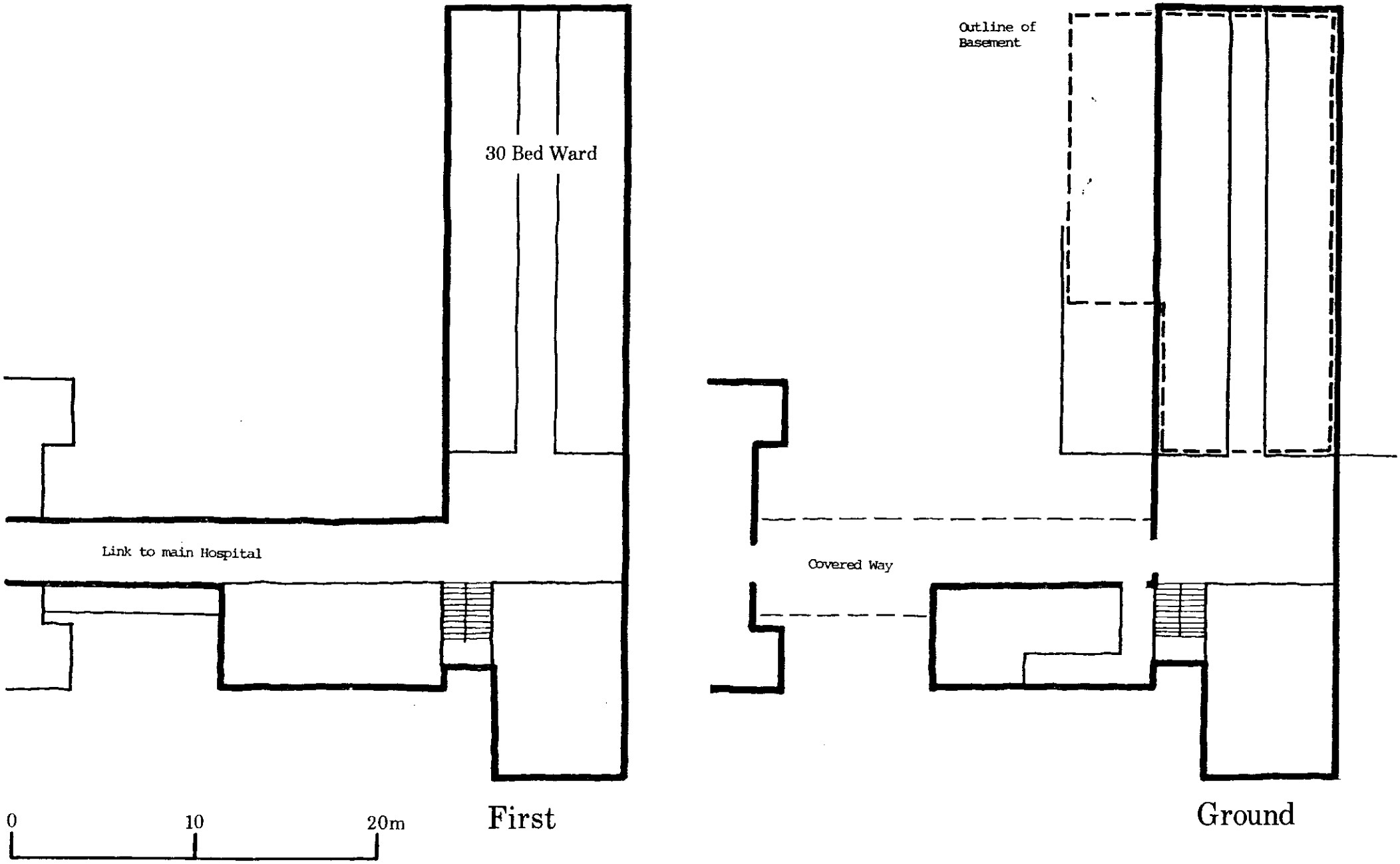


Fig A8

Jezzine
Site Plan

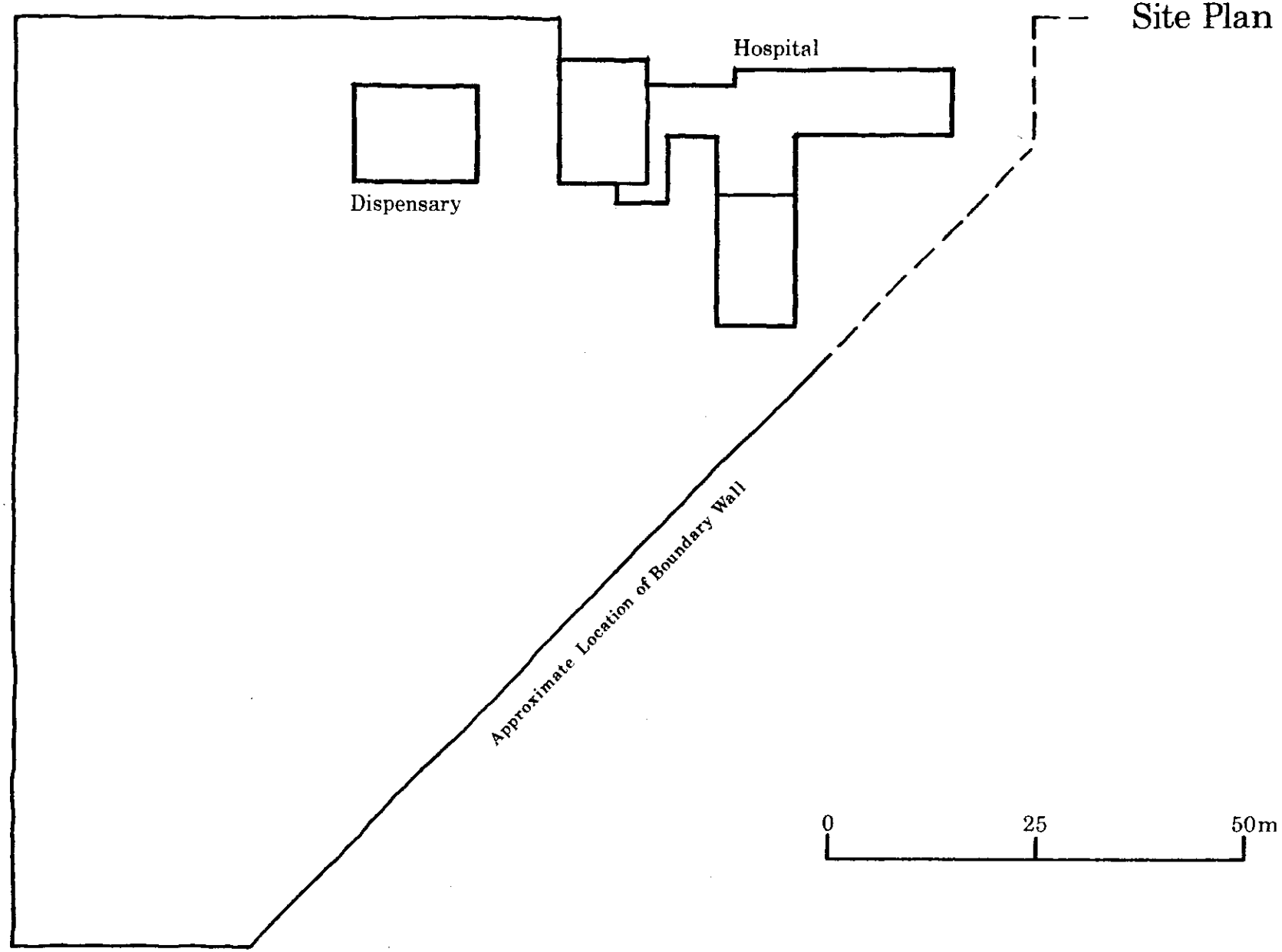


Fig A9

Jezzine
Ground Floor

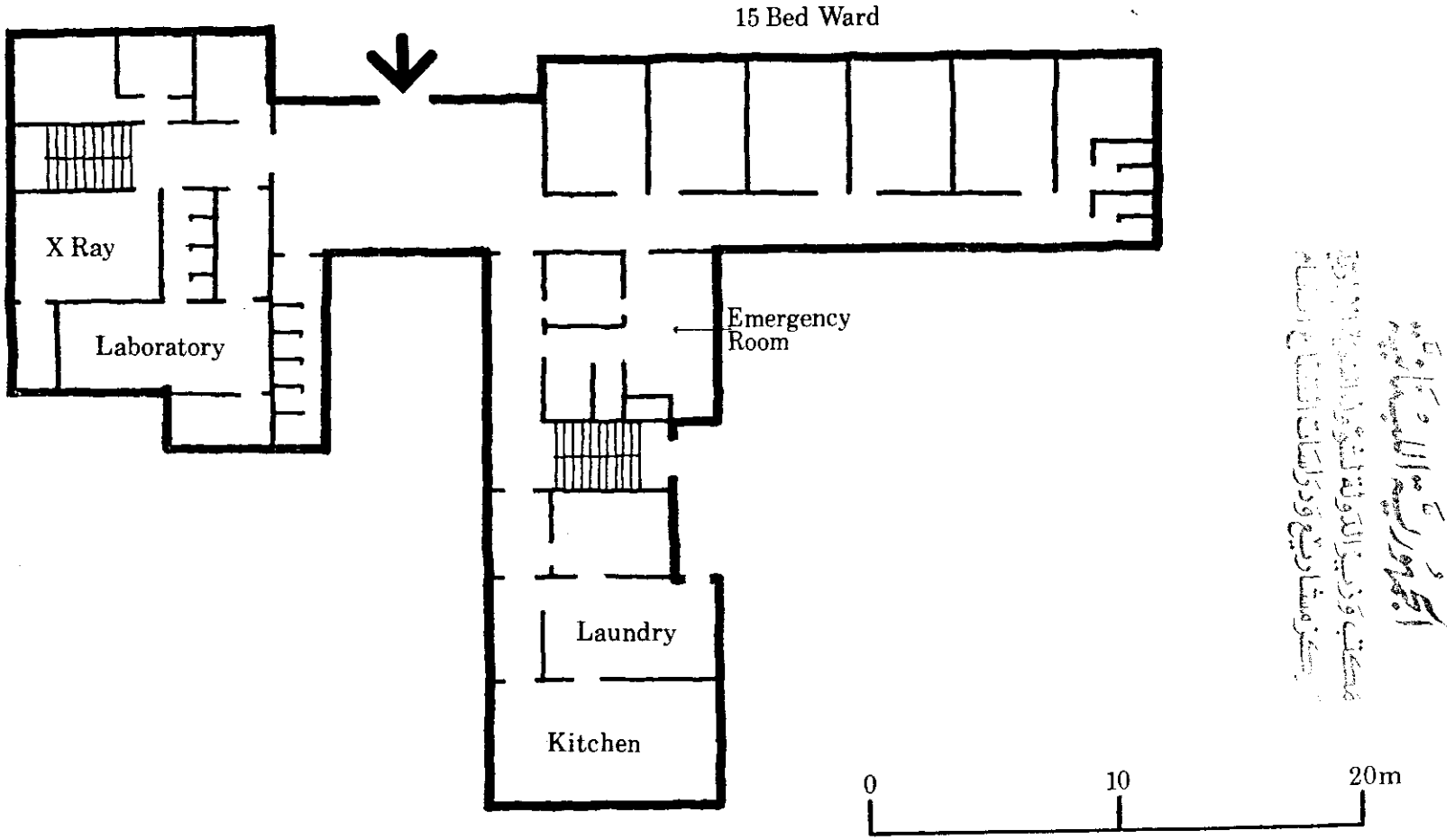


Fig A10

Jezzine
First Floor

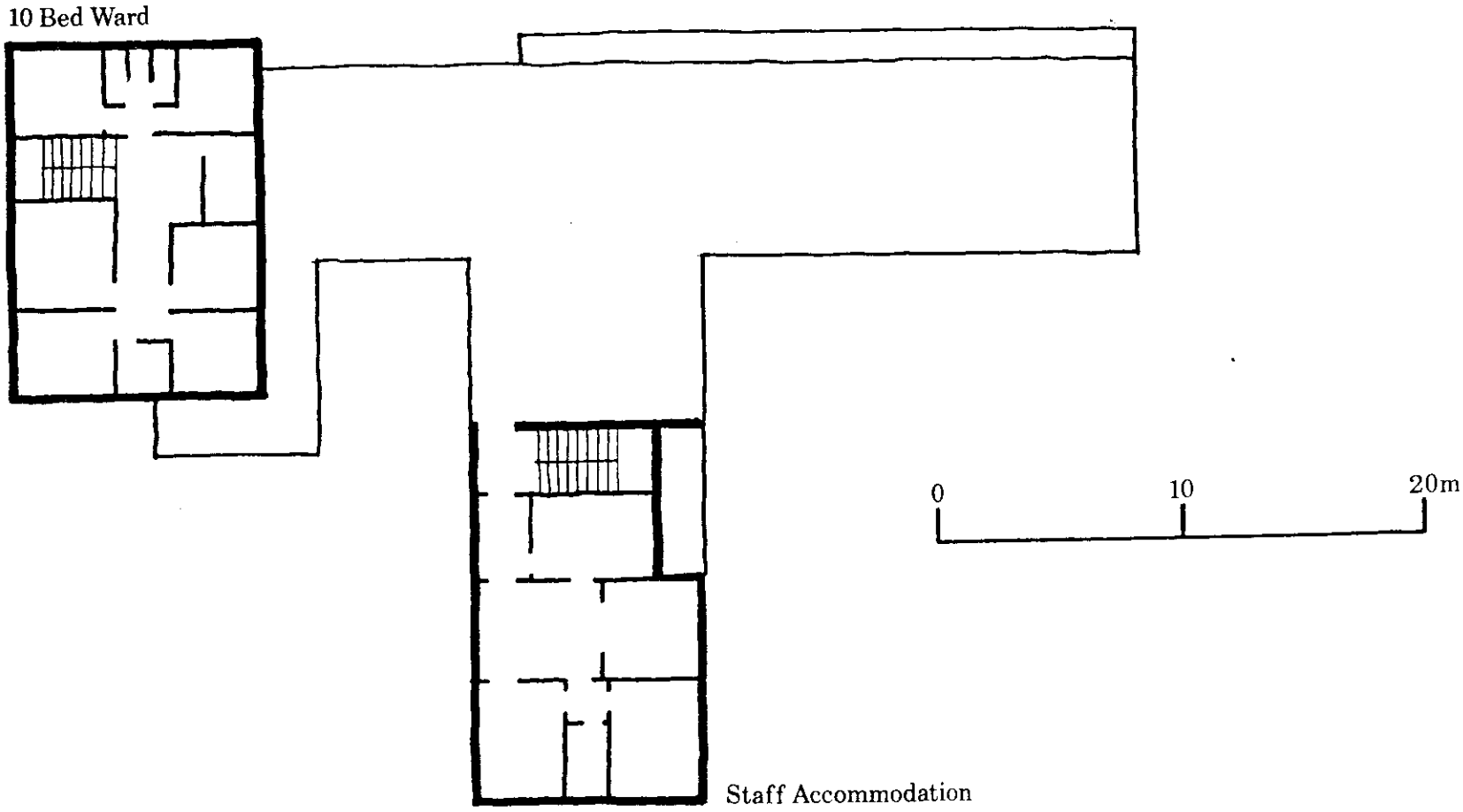


Fig A11

Nabatiyeh Ground Floor

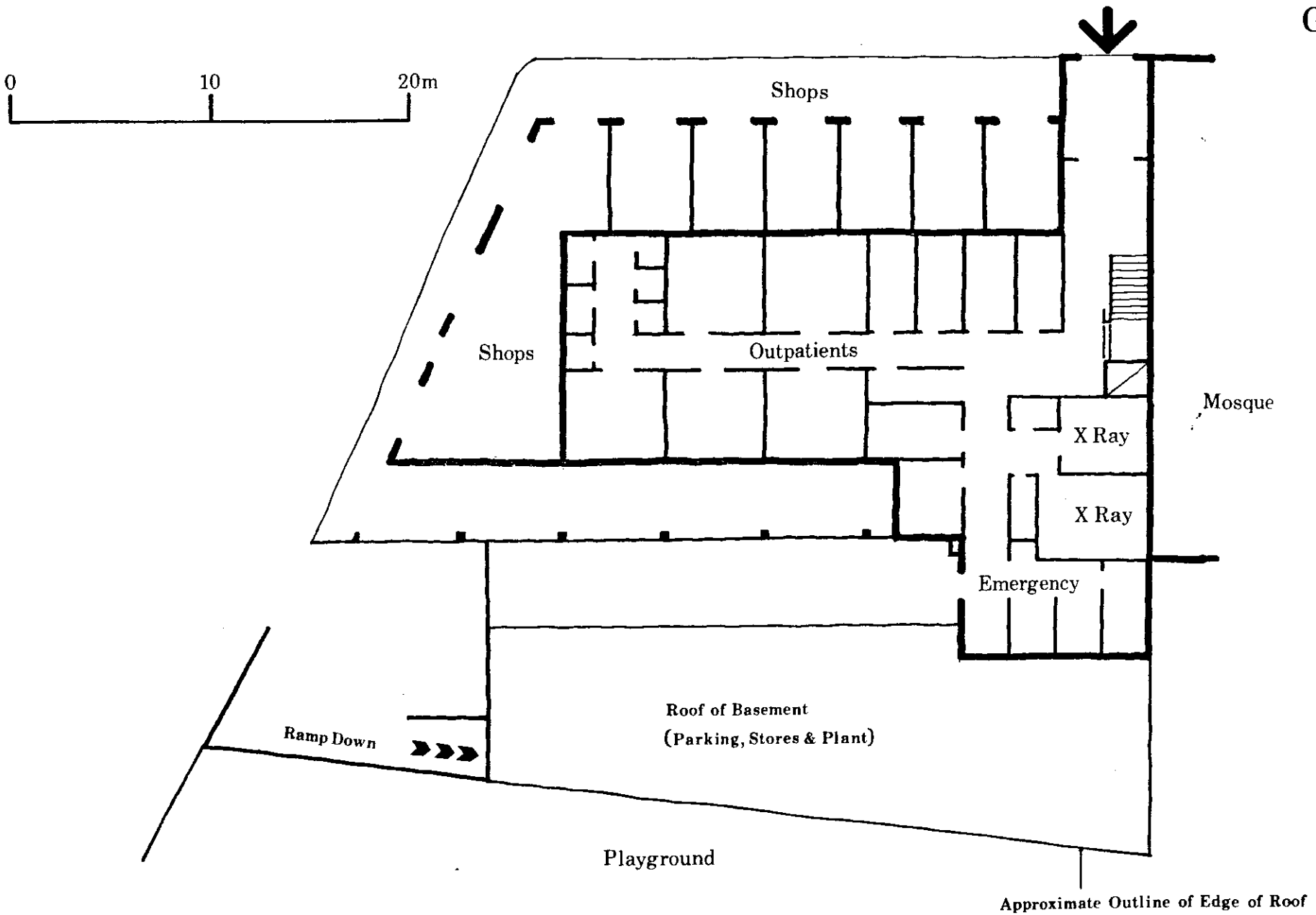


Fig A12

Nabatiyeh
First Floor

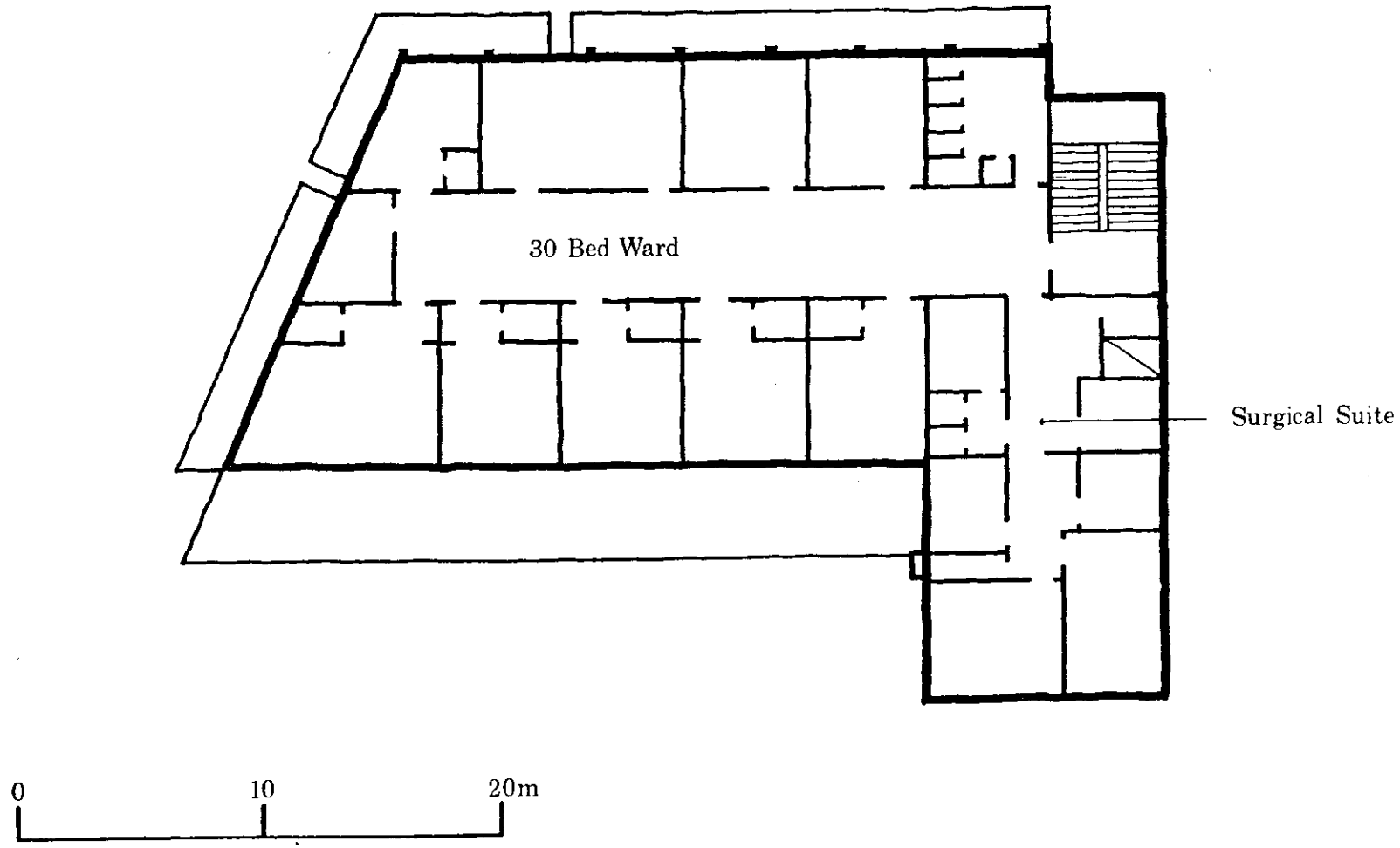


Fig A13

Nabatiyeh
Second Floor

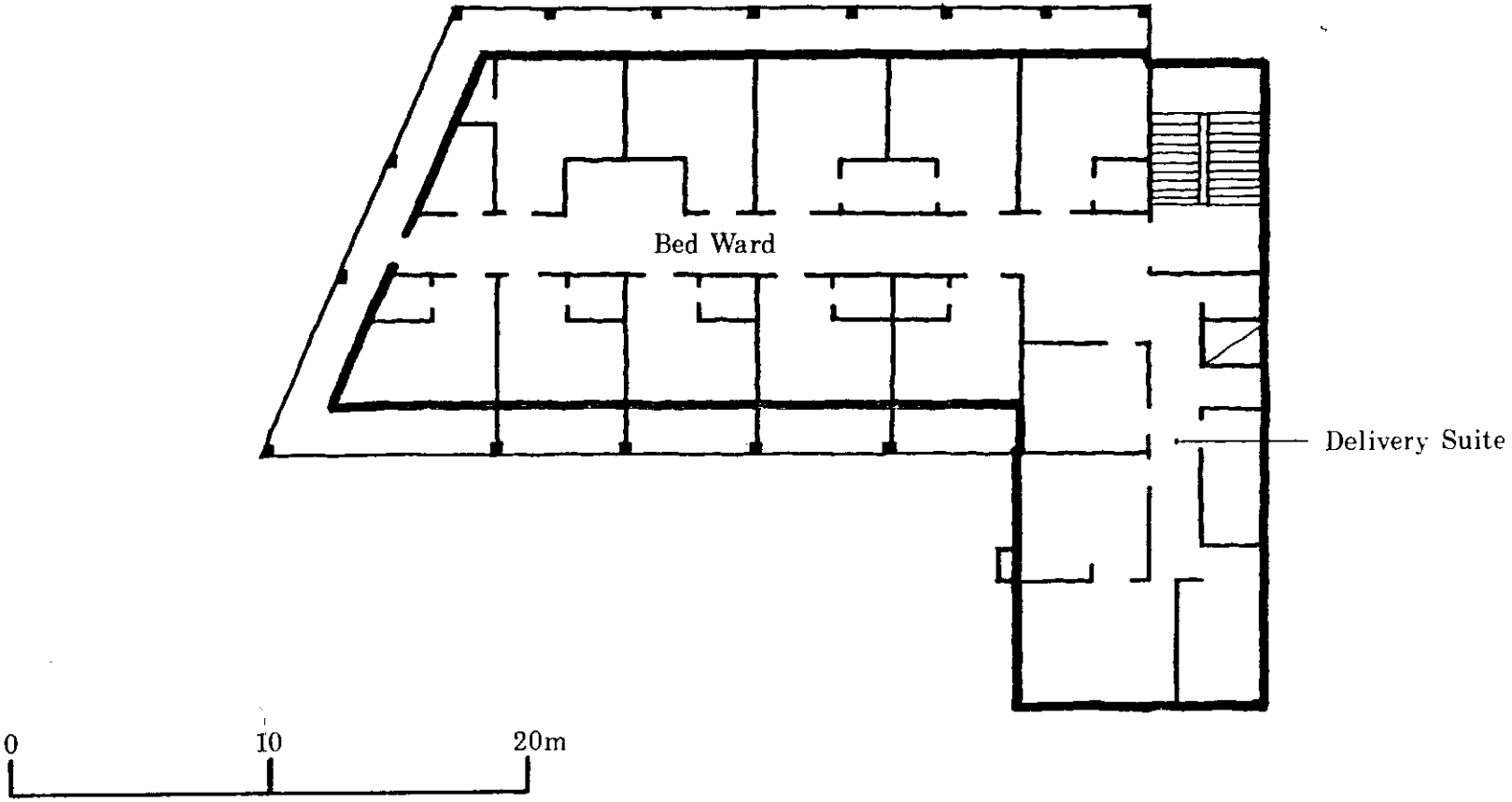
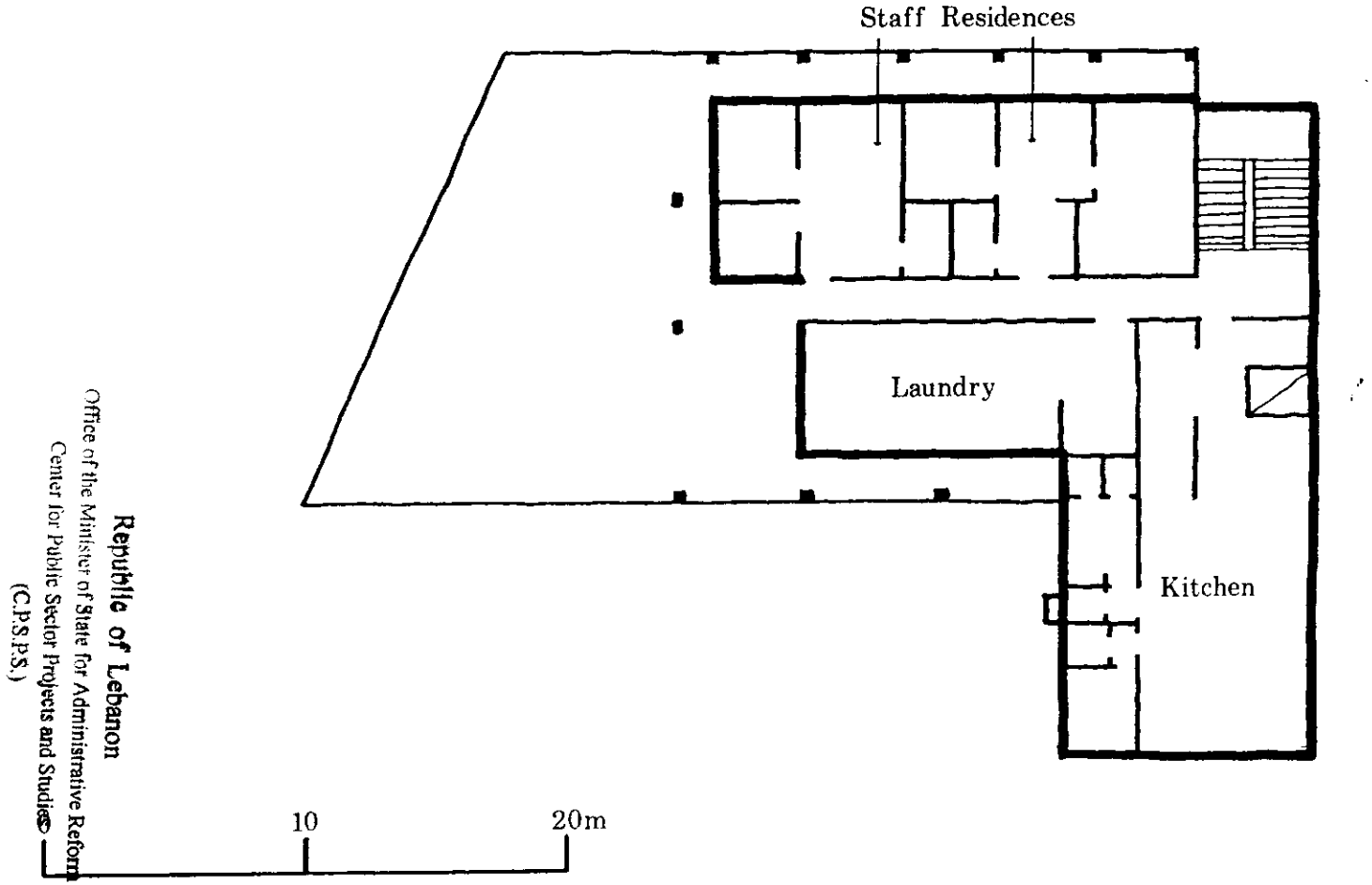


Fig A14

Nabatiyeh
Third Floor



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Center for Public Sector Projects and Studies
(C.P.S.P.S.)

Fig A15

Marjayoun Site Plan

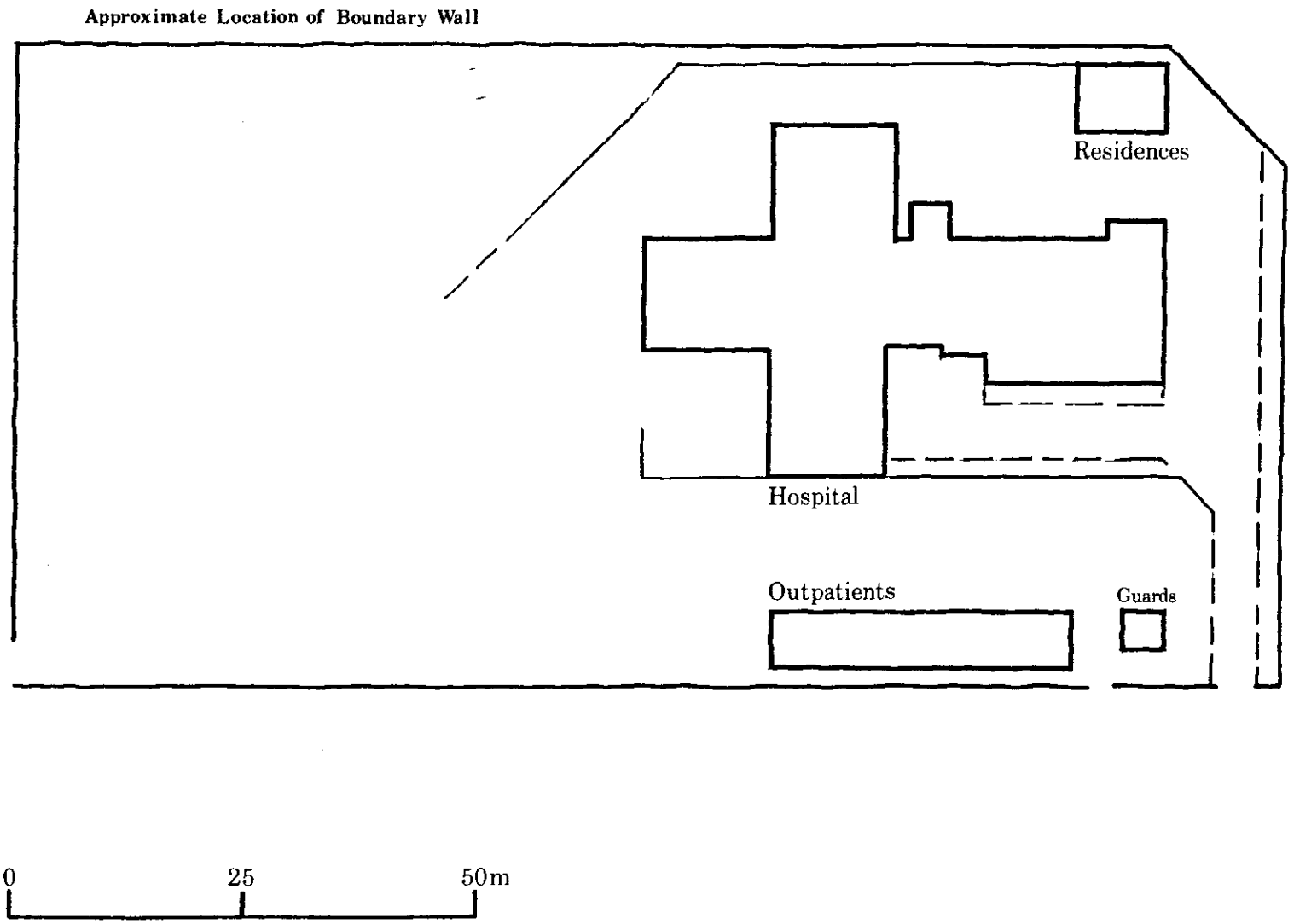


Fig A16

Marjayoun Hospital Ground Floor

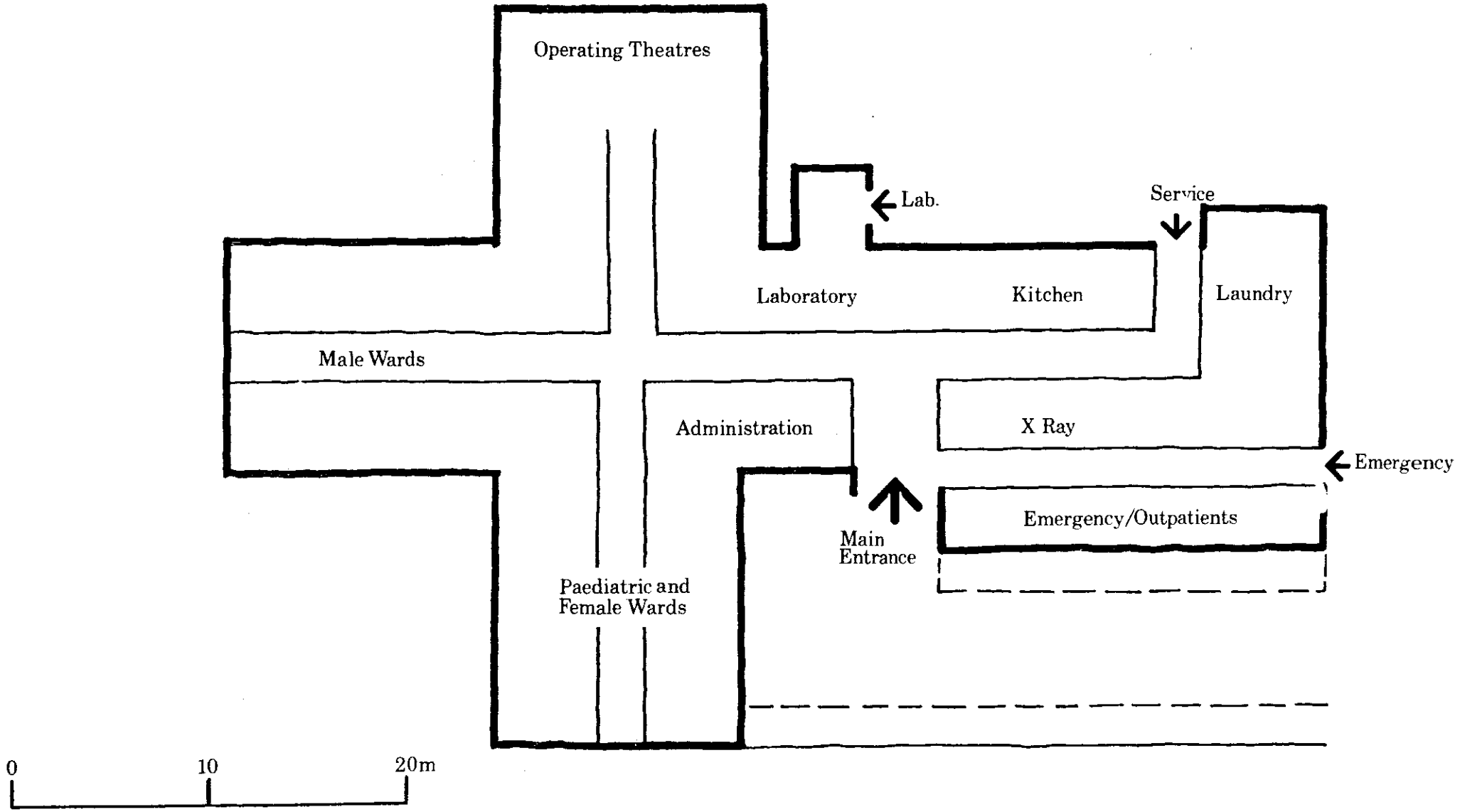
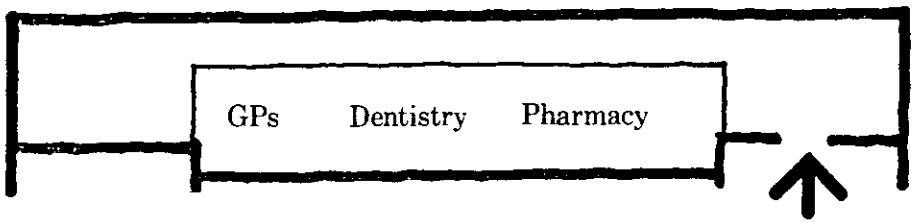


Fig A17

Marjayoun Outpatients Block Ground Floor



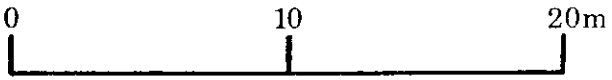


Fig A18

Tyre
Site Plan

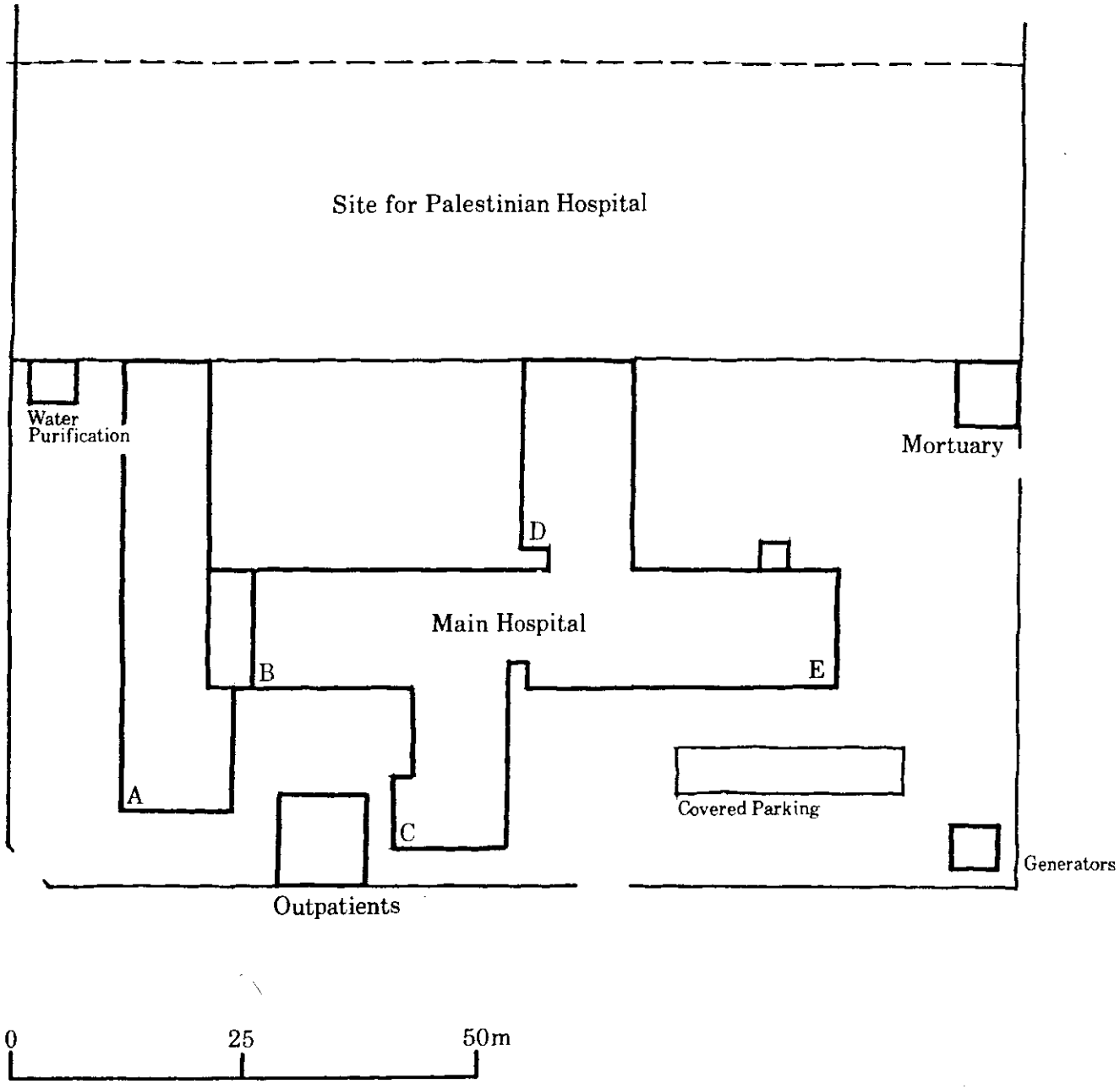


Fig A19

Tyre
Ground, First
Part

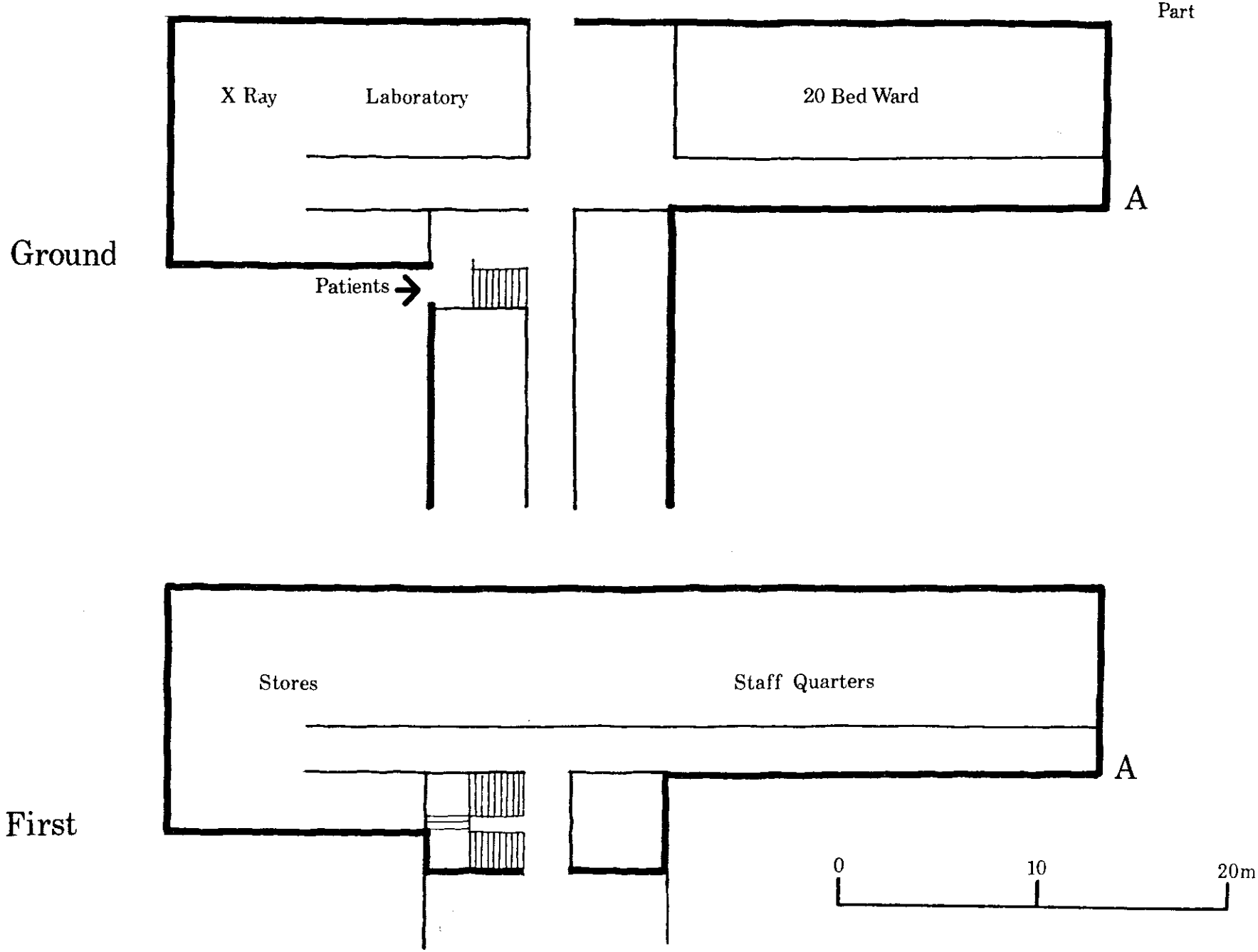


Fig A20

Tyre
Ground
Part

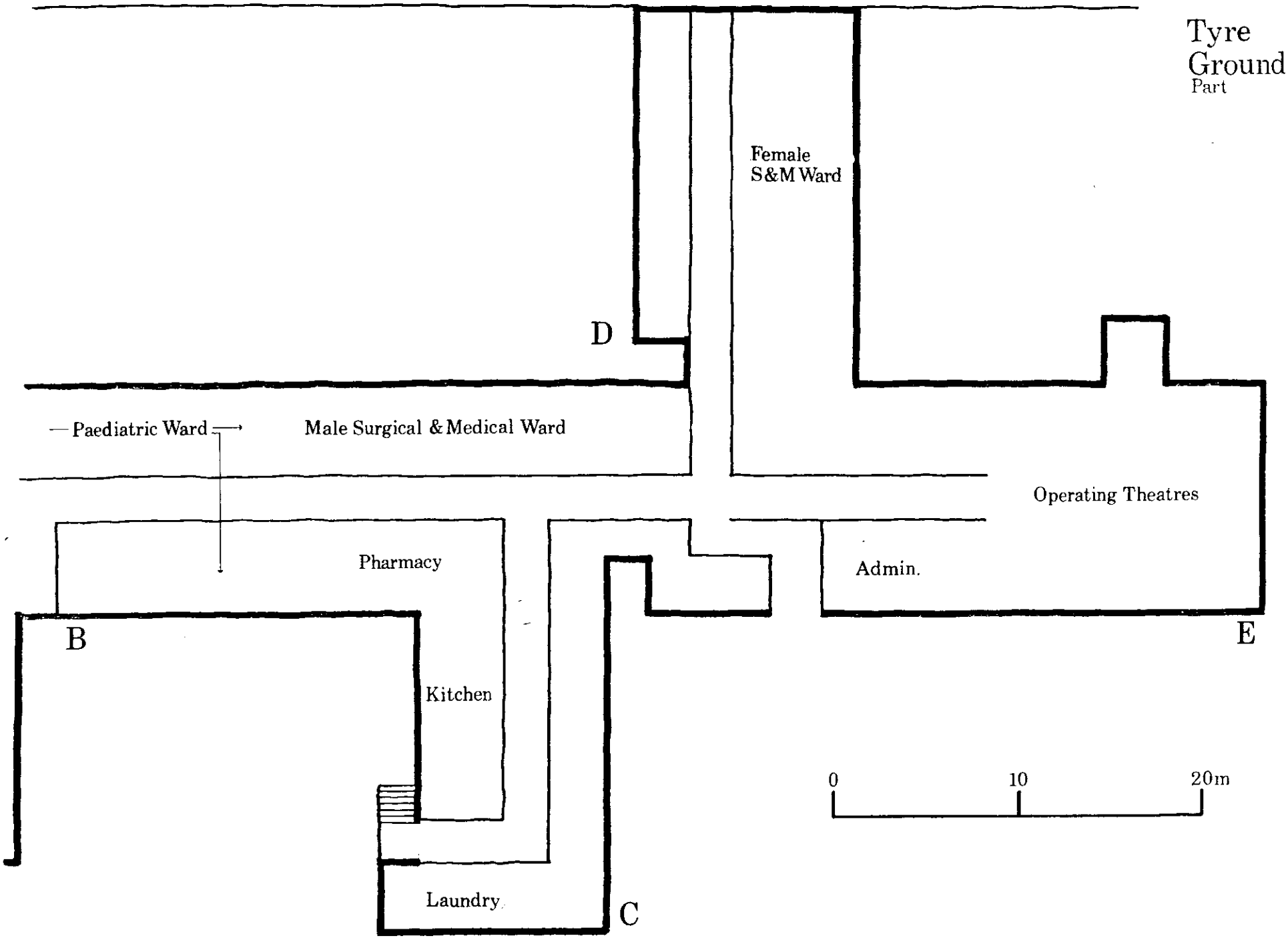


Fig A 21

Tibnine
Site Plan

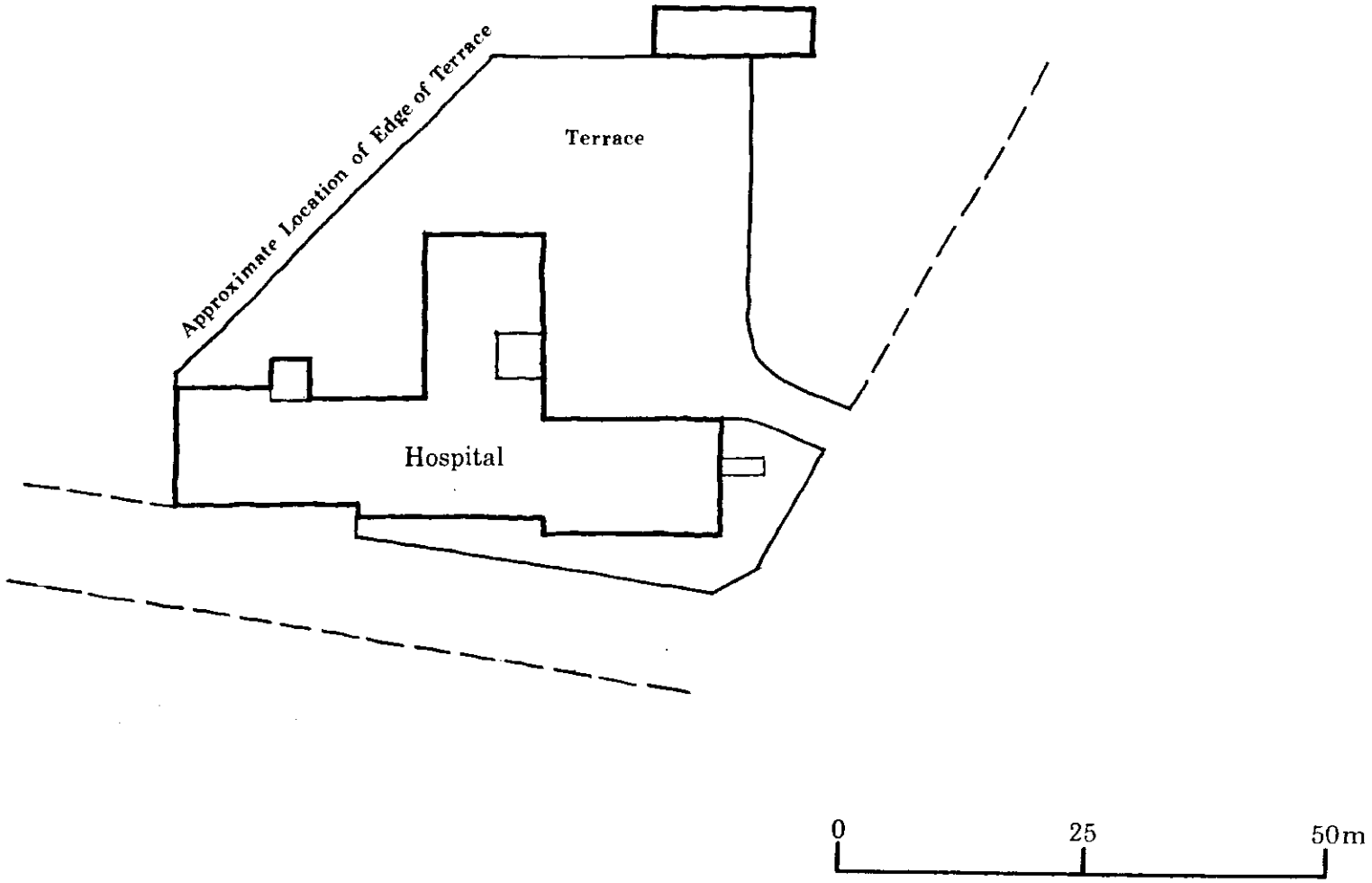


Fig A22

Tibnine
Lower Ground

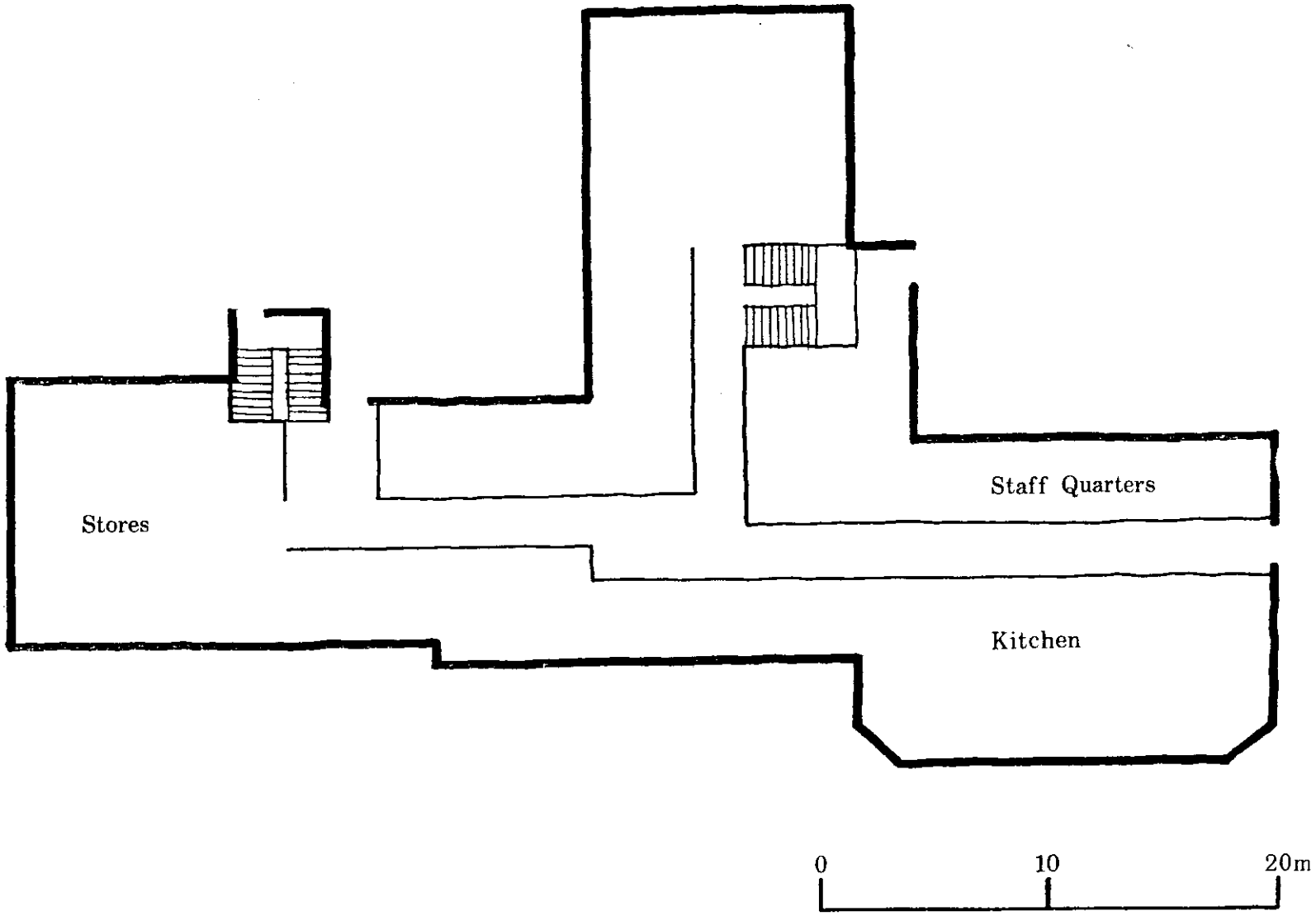


Fig A23

Tibnine
Ground Floor

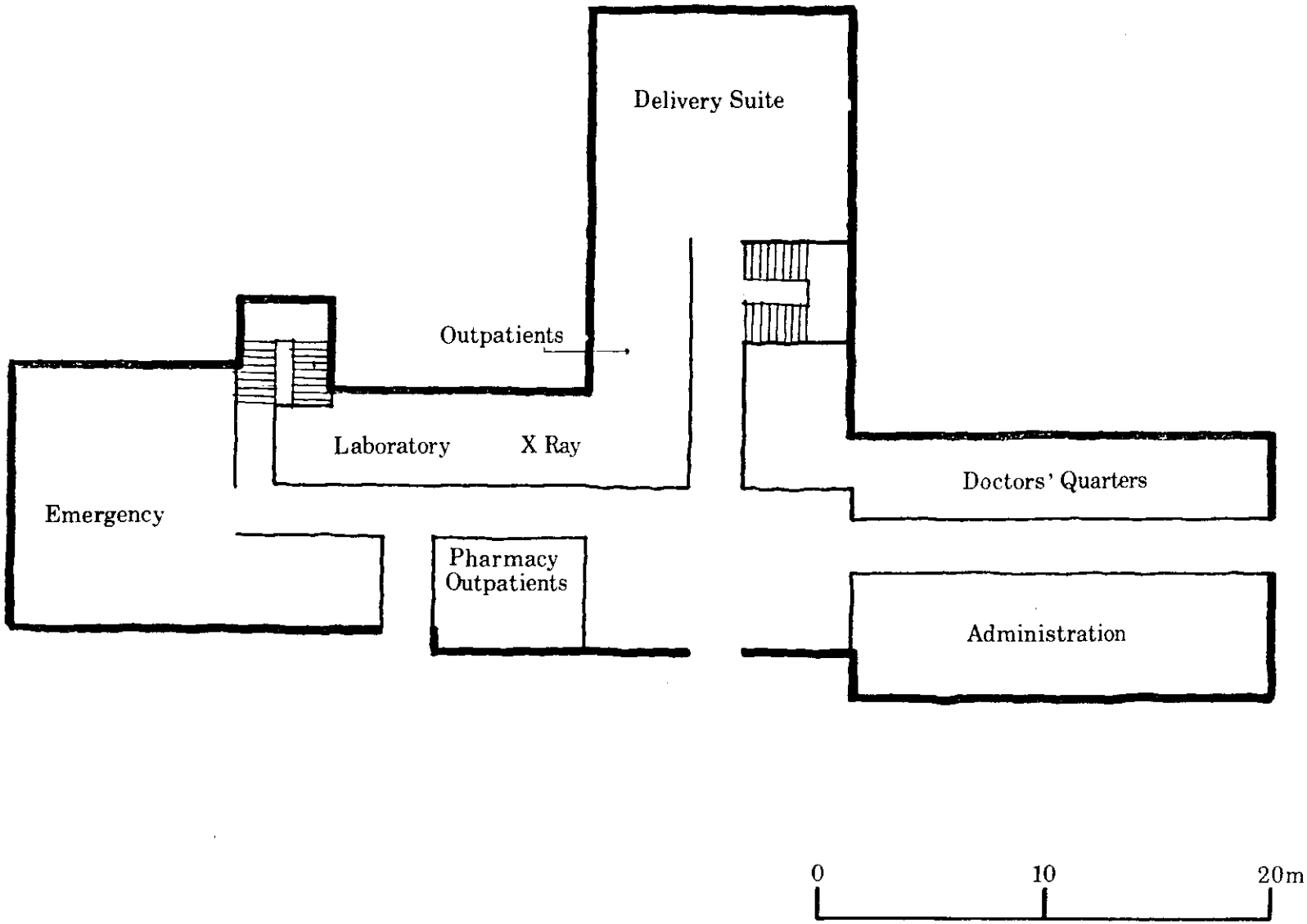
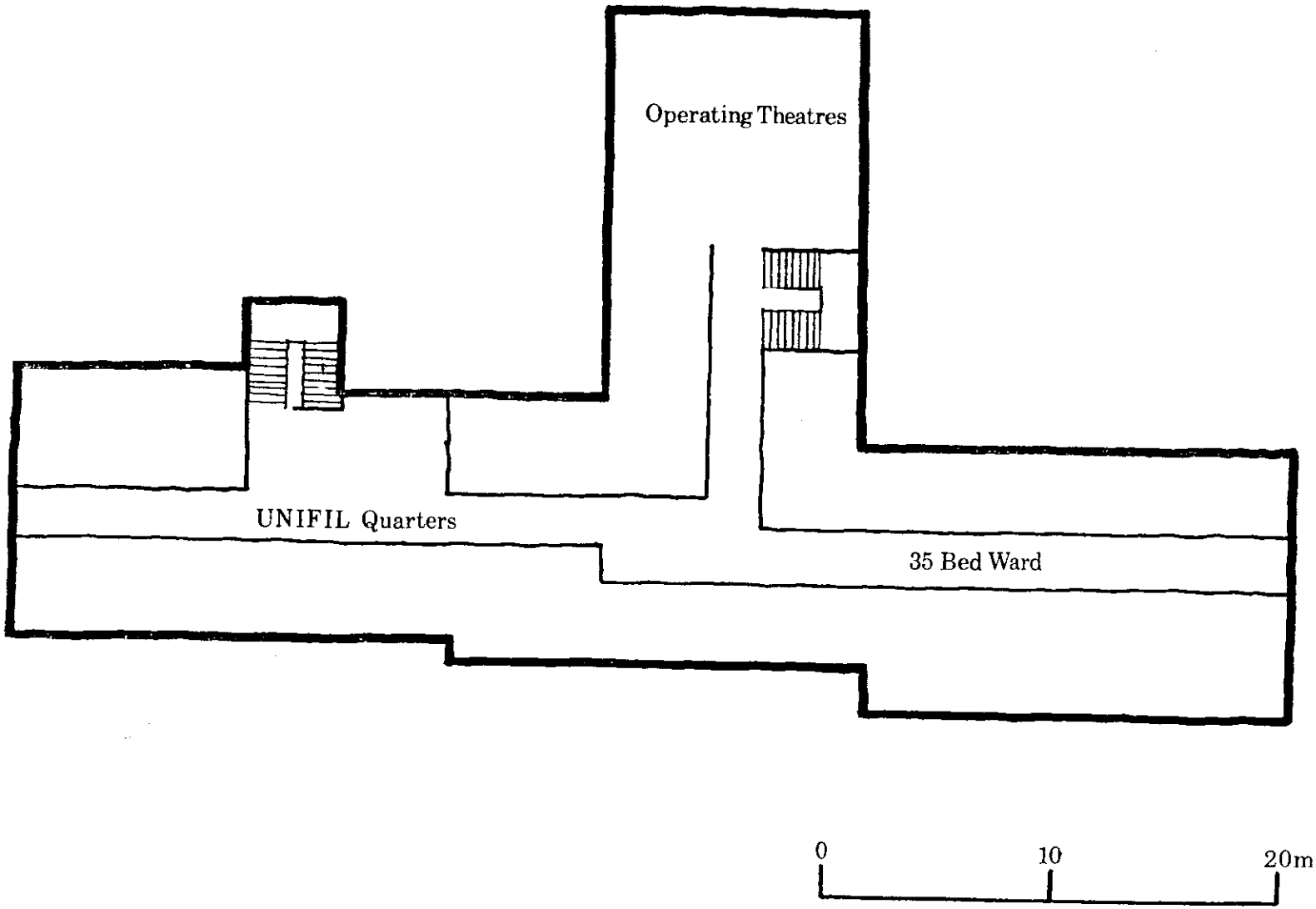


Fig A24

Tibnine
First Floor



APPENDIX 3

COMPARISON OF POPULATION ESTIMATES BY QADA

	HASBAYA	MARJEYOUN	NABATIYEH	JEZZINE	BINT JBAIL	TYRE	SAIDA	TOTAL
1	13674	41581	65152	20477	31186	82814	93488	348372
2	26535	80689	126429	39735	60516	160702	181415	676021
3	9527	27883	39499	9846	19818	60456	53918	220947
4	17000	30000	20000	18000	30000	85000	45000	245000
5	45000	55000	60000	50000	50000	65000	200000	525000
6	51619	98961	110385	83838	111920	133398	144209	734330
PLANNING ESTIMATE	25000	50000	65000	25000	35000	100000	200000	500000

1. (a) Using UNICEF estimate/counts of school enrolment, + 5% to compensate for missing data.
   (b) Using estimate that 35% of population is aged 3-18 years.
   (c) Using estimate that 86% of population 3-18 years is enrolled in school.

2. (a) Using UNICEF estimate/count, + 10%.
   (b) Using estimate that 25% of population is aged 3-18 years.
   (c) Using estimate that 65% of population 3-18 years is enrolled.

3. (a) Using Ministry of Education estimate for public and UNICEF estimate for private school enrolment.
   (b) Using estimate that 45% of population is aged 3-18 years.
   (c) Using estimate that 95% of population 3-18 years is enrolled.

4. 1975 MoP statistical model estimates for the year 2000.
5. Ministry of Health, Saida, estimates for today.
6. Estimates from Al Baheth Cultural Review for 1981 (November 1981 issue).

APPENDIX 4

STAFFING REQUIREMENTS AND COSTS

Estimates of the staffing requirements of the proposed public hospitals have been prepared to reflect planned hospital bed provision in 1988 and in 1993. Estimates of numbers and costs for 1988 relate to the completion of these hospital projects scheduled for the period 1983-88; those for 1993 relate to the completion of projects scheduled for the period 1988-93. It is to be expected that the year-by-year requirements for, and costs of, hospital staff can be determined by interpolation between existing provision levels, the 1988 recommendations and the 1993 recommendations.

The figures that follow are approximate only and are included in order to illustrate the broad budgetary implications of the plan. Much work remains to be done to develop detailed department-by-department staff lists for each hospital.

Staff requirements for community beds have been assessed by extrapolation in relation to the bed complement from the proposals made for the Hasbaya Community Hospital in our report "Health Planning in South Lebanon: Hasbaya". Staff requirements for area and regional beds have been based on higher standards of provision reflecting the increased complexity and comprehensiveness of services being provided and the need to maintain 24-hour cover in many areas. The resulting staff numbers are, in our view, comparatively modest for the types of hospital being provided.

The following approximate staff per bed ratios are achieved:

Regional hospital	2.8
Area hospitals	2.35
Community hospitals	2.1

Costs have been assessed on the basis of the same range of salaries as those used for Hasbaya, including the proposed increases in salary above normal Government levels in order to compete effectively with private-sector rates. However, the further 10 percent addition to salaries proposed in order to attract staff to work in the isolated conditions of Hasbaya has been applied only to comparable situations, namely Marjayoun and Tibnine. This means that salary levels in the community hospitals will be 10 percent higher than they are in area and regional hospitals.

The resulting approximate average annual salary costs per bed are as described below:

	LL
Regional hospital	94 000
Area hospitals	78 000
Community hospitals	71 000

The cost for community hospitals excluding the 10 percent "rural inducement' would be LL 65 000 per bed per annum.

The tables which follow list, for each hospital, the staff required and resulting salary cost in 1988. In the case of hospitals which are to be extended between 1988 and 1993 a cost per bed is computed on the basis of the 1988 costs and applied to the increased bed complement to produce a figure for 1993.

SIDON REGIONAL HOSPITAL (250 beds)

Staff Category	No.	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)
Doctors	50	9000	450 000
Senior nurses	35	1950	68 250
Registered nurses	85	1750	148 750
Practical nurses	75	1450	108 750
Nurses aides	100	1700	110 000
Technicians and Drivers	100	1400	140 000
Administrators	15	2500	37 500
Clerks	65	1200	78 000
Others	170	1100	187 000
Total	695		1 328 250
Addition to compete with private sector - doctors			450 000
- others			175 650
Total monthly salary cost			1 953 900
Total annual salary cost in 1988			23 446 800
Cost per bed per annum			93 787
Extra for 50 beds			4 689 360
Total annual salary cost in 1993			28 136 160

NABATIYEH AREA HOSPITAL (55 beds)

Staff Category	No	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)
Doctors	9	9000	81 000
Senior nurses	9	1950	17 550
Registered nurses	15	1750	26 250
Practical nurses	15	1450	21 750
Nurse aides	24	1100	26 400
Technicians & Drivers	18	1400	25 200
Administrators	3	2500	7 500
Clerks	8	1200	9 600
Others	28	1100	30 800

Total	129	246 050
Additions to compete with private sector - doctors		81 000
- others		33 010
Total monthly salary cost		360 060
Total annual salary cost in 1988		4 320 720
Cost per bed per annum		78 559
Extra for 35 beds		2 749 549
Total annual salary cost in 1993		7 070 269

MARJAYOUN COMMUNITY HOSPITAL (50 beds)

Staff Category	No.	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)
Doctors	6	9000	54 000
Senior nurses	7	1950	13 650
Registered nurses	13	1750	22 750
Practical nurses	12	1450	17 400
Nurses aides	19	1100	20 900
Technicians & Drivers	14	1400	19 600
Administration	2	2500	5 000
Clerks	6	1200	7 200
Others	25	1100	27 500
Total	104		188 000
Additions to compete with private sector - doctors			54 000
- others			26 800
Rural inducement @ 10 percent of total			26 880
Total monthly salary cost			295 680
Total anual salary cost in 1988			3 548 160
Cost per bed per annum			70 963
Extra for 40 beds			2 838 528
Total annual salary cost in 1993			6 386 688

HASBAYA COMMUNITY HOSPITAL (50 beds)

Staff Category	No.	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)

Doctors	6	9000	54 000
Senior nurses	7	1950	13 650
Registered nurses	13	1750	22 750
Practical nurses	12	1450	17 400
Nurses aides	19	1100	20 900
Technicians & Drivers	14	1400	19 600
Administration	2	2500	5 000
Clerks	6	1200	7 200
Others	25	1100	27 500
Total	104		188 000
Additions to comete with private sector - doctors			54 000
- others			26 800
Rural inducement @ 10 percent of total			26 880
Total monthly salary cost			295 680
Total annual salary cost in 1988			3 548 160

TYRE AREA HOSPITAL (76 beds)

Staff Category	No.	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)
Doctors	12	9000	108 000
Senior nurses	12	1950	23 400
Registered nurses	21	1750	22 750
Practical nurses	21	1450	30 450
Nurse aides	33	1100	36 300
Technicians & Drivers	25	1400	35 000
Administrators	4	2500	10 000
Clerks	11	1200	13 200
Others	39	1100	42 900
Total	178		336 000
Additions to compete with private sector - doctors			108 000
- others			45 600
Total monthly salary cost			489 600
Total annual salary cost in 1988			5 875 200
Cost per bed per annum			77 305
Extra for 134 beds			10 358 905
Total annual salary cost in 1993			16 234 105

TIBNINE COMMUNITY HOSPITAL (65 beds)

Staff Category	No.	Average Monthly Govt. Salary (LL)	Total Monthly Cost (LL)
Doctors	8	9000	72 000
Senior nurses	9	1950	17 550
Registered nurses	17	1750	29 750
Practical nurses	16	1450	23 200
Nurse aides	25	1100	27 500
Technicians & Drivers	18	1400	25 200
Administrators	3	2500	7 500
Clerks	8	1200	9 600
Others	33	1100	36 300
Total	137		248 600
Additions to compete with private sector - doctors			72 000
- others			35 320
Rural inducement @ 10 percent total			335 592
Total monthly salary cost			391 512
Total annual salary cost in 1988			4 698 144

APPENDIX 5

EQUIPMENT AND EQUIPMENT COSTS

APPENDIX 5

EQUIPMENT & EQUIPMENT COSTS

Overall estimates of equipment costs phased over the two 5-year plan periods have been given in Section 7. These consist of budgetary estimates made up of all major and minor items. A detailed list of which items are and are not included is given in the report "Health Planning for South Lebanon: Hasbaya" Appendix 4, Appendix A1.

The lists below present the quantities and cost estimates (1983 prices) for all major items ie costing more than £sterling 1000. The hospitals of South Lebanon fall into two groups for equipment purposes.

... Sidon Regional Hospital (250 beds) and Tyre Area Hospital (210 beds)

... Hasbaya Community Hospital (50 beds) Nabatiyeh Area Hospital (55 & 90 beds) and Marjayoun Community Hospital (90 beds)

Although the sizes and functions vary within each group, they do fall within comparable ranges for major equipment purposes.

COST SIGNIFICANT ITEMS OF EQUIPMENT
(ie £1,000 or more installed)

1 SIDON REGIONAL HOSPITAL - (250 BEDS) &
TYRE AREA HOSPITAL - (210 BEDS)

		Qty.	Installed Cost (Approx) Rate (£)	Total (£)
A. X-RAY EQUIPMENT				
- X-Ray Dept:	Bucky Table & Chest Stand	1	28 900	28 900
	Tilting Table & " "	1	29 875	29 875
- A & E Dept:	Basic Table for extremities with chest stand	1	17 700	17 700
- Theatres & Wards:	Mobile X-Ray Machine, manually propelled	2	15 400	30 800
B. OPERATING THEATRE EQUIPMENT				
- Theatres:	Lamp, Operating, ceiling mounted	2	4 800	9 600
	" " mobile with battery	2	2 000	4 000
	Table, " c/w accessories	2	4 650	9 300
	Diathermy Unit	2	2 900	5 800
	Anaesthetic Machine	2	2 850	5 700
	Theatre Control Panel, wall recessed	2	4 900	9 800
- DELIVERY SUITE:	Lamp, Operating, ceiling mounted	1	4 800	4 800
	Lamp, Operating, mobile with battery	3	2 000	6 000
	Table, Obstetric	3	3 500	10 500
	Anaesthetic Machine	1	2 850	2 850
C. PHYSIOLOGICAL MONITORING & RESUSCITATION EQUIPMENT				
- Theatres:	Resuscitation unit, trolley mounted	1	4 775	4 775
	Patient monitoring equipment	2	3 850	7 700
	Monitor, Foetal Heart (Delivery Room Special)	1	3 200	3 200
- A & E Dept:	Resuscitation Unit, trolley mounted	1	4 775	4 775
	Patient monitoring equipment	1	2 695	2 695
- ITU/CCU:	Resuscitation Unit, trolley mounted	1	4 775	4 775
	Patient monitoring equipment	6	3 850	23 100
D. CSSD EQUIPMENT				
	Autoclaves, steam, porous load/ inst. cycle 14 cu.ft. c/w steam boilers	3	26 500	79 500
	Washer, instrument	1	6 200	6 200
	Solvent washer; ultrasonic sink; drying cabinet etc	1	14 250	14 250

E. MORTUARY EQUIPMENT

Cadaver store, refrigerated, 12-place	1	11 200	11 200

F. LAUNDRY EQUIPMENT

Washer, Barrier	1	17 700	17 700
" Foul Linen 45lb	1	5 400	5 400
Washing Machine 45lb	3	5 400	16 200
Hydro-Extractor 30lb	3	2 500	7 500
Tumble Dryer 55lb	2	3 400	6 800
Roller Ironer	1	15 400	15 400

G. CATERING EQUIPMENT

Tabling, worktops etc		27 000	27 000
Cooking Range	2	4 000	8 000
Bratt Pan	2)	9 800	9 800
Boiler	1)		
Steamer Oven	1)		
Mixer, 10 gal	1	4 250	4 250
Boiling Table	1)	4 900	4 900
Oven Range	2)		
Hot Cupboard	2	2 300	4 600
Cold Room	3	8 100	24 300
Servery to Dining Room	1	13 400	13 400
Central Wash-up sinks, drainers, dish-washing machines etc	))	19 100	19 100

H. LABORATORY & PHARMACY EQUIPMENT

Glassware Washing Machine	1	3 500	3 500
" Drying Cabinet	1	1 000	1 000
Laboratory Autoclave	2	4 000	8 000
Balance, Top Pan	2	1 100	2 200
" Analytical	1	1 200	1 200
Blood cell counter	1	25 000	25 000
Microscope, phase contrst	2	1 200	2 400
Centrifuge (for Haematology)	1	1 000	1 000
Electophoresis with densitometer	1	17 000	17 000
Microscope with Kohler illumination	2	1 300	2 600
Incubator, low temperature	1	1 200	1 200
Centrifuge (for Bacteriology)	2	1 000	2 000
Biological Safety Cabinet	1	3 000	3 000
Autoclave, small (for Bacteriology)	1	2 000	2 000
Flame Photometer	1	1 400	1 400
Clinical Path Analysers (Cl^2, TCO^2, blood gas & uv/vis)	4	6 600	26 400
pH meter	1	1 200	1 200
Analysers "Bun" etc		5 000	5 000
Microtome	1	5 000	5 000
Cryostat	1	3 500	3 500

Tissue Processor	1	3 500	3 500
Embedding System	1	5 000	5 000
Slide stainer	1	3 500	3 500
Microscope, photo	1	2 500	2 500
Top Pan Balance-Pharmacy, electronic	1	1 300	1 300
Balance, Analytical, electronic	1	1 300	1 300
Tablet Counter, electronic	1	3 000	3 000
Dangerous Drugs Cabinet, large	1	1 000	1 000
Ointment Mill	1	1 200	1 200
Steam Pan	1	1 200	1 200
Bottle Washer, automatic	1	3 500	3 500
Autoclave, pharmacy	1	4 000	4 000
" " " small	1	1 000	1 000

2. HASBAYA COMMUNITY HOSPITAL - (50 BEDS)
NABATIYEH AREA HOSPITAL - (55 & 90 BEDS) &
MARJAYOUN COMMUNITY HOSPITAL - (90 BEDS)

Assumed Functional Content based on that given in the report "Health Planning for South Lebanon: Hasbaya" Appendix 1

A. X-RAY EQUIPMENT

Bucky Table & Chest Stand	1	28 900	28 900
Mobile X-Ray Machine, manually propelled	1	15 400	15 400

B. OPERATING THEATRE EQUIPMENT

- Theatres: Lamp, Operating, ceiling mounted	1	4 800	4 800
" " mobile, with battery	1	2 000	2 000
Table, operating, c/w accessories	1	4 650	4 650
Diathermy Unit	1	2 900	2 900
Anaesthetic Machine	1	2 850	2 850
Theatre Control Panel, wall recessed	1	4 900	4 900
- Delivery Suite: Lamp, Operating, ceiling mounted	1	4 800	4 800
Lamp, Operating, mobile with battery	2	2 000	4 000
Table, obstetric	2	3 500	7 000
Anaesthetic Machine	1	2 850	2 850

C. PHYSIOLOGICAL MONITORING & RESUSCITATION EQUIPMENT

- Theatres: Resuscitation Unit, trolley mounted	1	4 775	4 775
Patient monitoring equipment	1	3 850	3 850
Monitor, Foetal Heart (Delivery Room, Special)	1	3 200	3 200

D. CSSD EQUIPMENT

Autoclave, steam, porous load/ inst. cycle, 14 cu.ft.	1	26 500	26 500
Autoclave, steam, porous load/ standby	1	6 600	6 600
Washers, Drying Cabinet etc		11 550	11 550

E. MORTUARY EQUIPMENT

Cadaver store, refrigerated, 3-place, plus trolleys	1	9 250	9 250

F. LAUNDRY EQUIPMENT

Washer, Foul Linen 45lb	1	5 400	5 400
Washing Machine 45lb	1	5 400	5 400
Hydro-Extractor 30lb	1	2 500	2 500
Tumble Dryer 55lb	1	3 400	3 400

G. CATERING EQUIPMENT

Cooking Ranges		5 400	5 400
Bratt Pan	1	3 100	3 100
Boiling Table	1)		
Oven Range	1)	4 100	4 100
Cold Room	1	8 100	8 100
Servery to Dining Room	1	6 150	6 150
Central wash up equipment		6 550	6 550

H. LABORATORY & PHARMACY EQUIPMENT

Glassware washing machine	1	2 500	2 500
Laboratory Autoclave	1	2 500	2 500
Balance, Top Pan	1	1 100	1 100
Refrigerator, blood storage	1	1 200	1 200
Analyser, heamatology	1	10 000	10 000
Microscope, phase contrast	1	1 200	1 200
Electrophoresis equipment	1	2 000	2 000
Flame Photometer	1	1 400	1 400
Clinical Pathology analysers (Cl_2, TCO_2, blood gas)	3	2 050	6 150
Spectrophotometer	1	3 500	3 500
Centrifuge	1	1 000	1 000
Microtome, with knives	1	5 000	5 000
Tissue Processor	1	3 500	3 500
Embedding System	1	5 000	5 000
Microscope, c/w photofacility	1	2 500	2 500
Pharmacy Autoclave	1	2 000	2 000
Steam Pan	1	1 100	1 100

APPENDIX 6

REFERENCES AND STUDY TEAM

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