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PROPOSALS FOR THE
DEVELOPMENT OF
SCHOOL BUILDINGS
IN THE
AFRICAN COUNTRIES

AUGUST / 1967

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proposals for the Development of School Buildings in the African Countries

It is now common knowledge that the problems referring to the existence and progress of a nation are problems of utilization of its resources with the economic development as the target. This target is closely related to the cultural and educational development of the country. It has been historically proven that culture, science, and art have always followed a certain economic growth. Thus, the principal consideration of a contemporary education of a nation is the development of the country with the main emphasis on the educational requirements leading to a healthy economy, an important factor of cultural progress.

In the developing countries, the high rate of growth required in the socio-economic sector demands a parallel rate in the educational sector. However, the available resources are in most cases not adequate to meet the needs of the countries experiencing this growth. It is, therefore, a matter of principal importance to find the means for the maximum possible utilization of the money invested in educational facilities.

Setting this last point as the main objective for the definition of the policy for the development of school buildings, a compromise must be found between the quality of the buildings and their quantity, taking into account the cost and the standards that can be attained within the limits of the financial, human and natural resources of the country.

REGIONAL SCHOOL BUILDING CENTRE FOR AFRICA
KHARTOUM, SUDAN, P.O. BOX 1720 • AUGUST 1967

The efficient utilization of the money which will be invested in educational facilities requires a thorough study, not only of the construction, but of everything which is related to the type, size and location of the school building in connection with the educational and environmental requirements, the growth and movement of population, the financial, human and physical resources of the country, the time and administration required for the planning, designing and construction of the school buildings, etc.

These interrelated problems call for a solution which, taking into account all factors involved, will give the answers to the questions: what type of school buildings; what size; when; where; how and at what cost they should be constructed. The answers to these questions will guide a country in the development of its school buildings.

THE PROBLEM

EVERY COUNTRY MUST PROVIDE
EDUCATIONAL FACILITIES



FOR ALL THE PUPILS



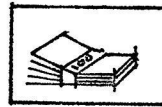
WITHIN A CERTAIN PERIOD OF YEARS

PRESENT

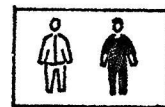
FUTURE



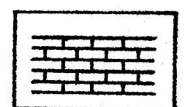
WITHIN THE LIMITS OF ITS AVAILABLE RESOURCES



FINANCIAL



HUMAN



NATURAL

EDUCATION IS A DYNAMIC PROCESS:
STUDENT POPULATION GROWS EDUCATIONAL METHODS FOLLOW THE PATTERN OF PROGRESS

EDUCATIONAL NEEDS CAN NEVER BE FULLY SATISFIED

RESOURCES ARE NEVER ADEQUATE ENOUGH TO MEET THE EDUCATIONAL FACILITIES

THE PROBLEM OF THE DEVELOPMENT OF SCHOOL BUILDINGS

IS A PROBLEM OF MAKING THE MOST EFFICIENT USE OF THE AVAILABLE RESOURCES

TO THIS END:

A DETAILED AND COMPREHENSIVE STUDY OF ALL FACTORS INVOLVED IS OF PRIMARY IMPORTANCE


THESE ARE THE MAIN SECTORS OF THIS STUDY:


- A. THE EXISTING NUMBER OF PUPIL PLACES
- B. ASSESSMENT OF NEEDS
- C. SCHOOL BUILDING STANDARDS
- D. NATIONAL SCHOOL BUILDING PROGRAMMES
- E. IMPLEMENTATION
- F. RESPONSIBILITIES AND FUNCTIONS

A. THE EXISTING NUMBER OF PUPIL PLACES


The starting point of the problem is the knowledge of the present situation. It is of primary importance to know the country's existing number of pupil places or, in other words, the number of pupils which can be accommodated in the existing stock of school buildings. Thus, the present enrolment of pupils must be examined as well as the number, size, physical condition and location of the existing buildings. The existing pupil places must then be classified according to the various levels of education, the physical condition and ownership (public-private) of the building, the **type** of accommodation and their distribution in the country.

A. THE EXISTING NUMBER OF PUPIL PLACES

	
THE PRESENT ENROLMENT OF P U P I L S	
IN:	
<ul style="list-style-type: none"> • PRIMARY • SECONDARY • TECHNICAL 	<ul style="list-style-type: none"> • PUBLIC • PRIVATE
<ul style="list-style-type: none"> • URBAN • RURAL 	SCHOOLS
<ul style="list-style-type: none"> • THE VARIOUS GEOGRAPHICAL DISTRICTS OF THE COUNTRY 	

	
THE EXISTING SCHOOL BUILDINGS	
NUMBER AND SIZE OF:	
<ul style="list-style-type: none"> • PRIMARY • SECONDARY • TECHNICAL 	<ul style="list-style-type: none"> • PUBLIC • PRIVATE
<ul style="list-style-type: none"> • URBAN • RURAL 	SCHOOLS
PHYSICAL CONDITION	
ACCOMMODATION PROVIDED	
DISTRIBUTION IN THE COUNTRY	

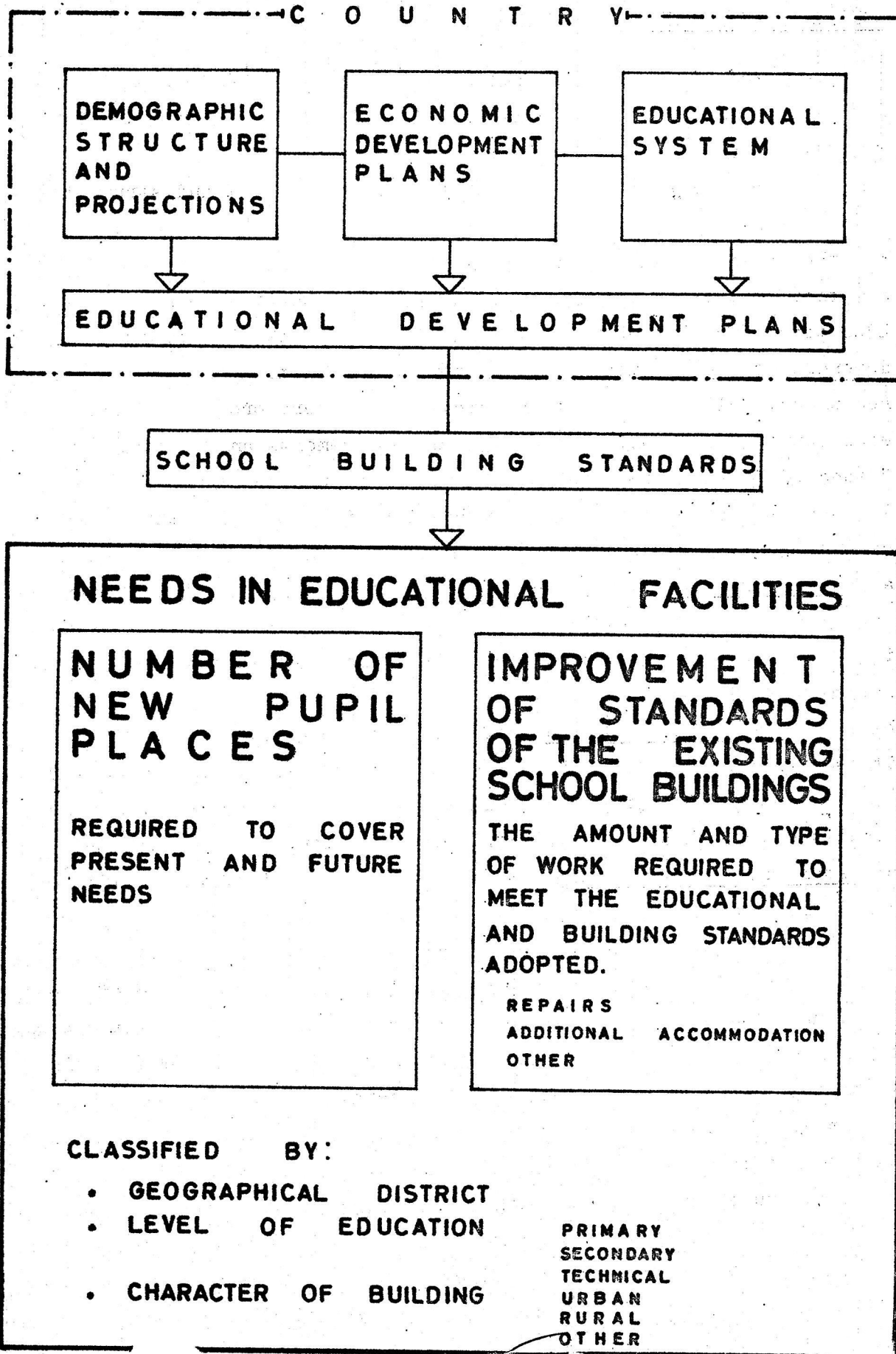


				
EXISTING NUMBER OF PUPIL PLACES				
A C C O R D I N G T O T H E I R :				
EDUCATIONAL LEVEL	OWNERSHIP	PHYSICAL CONDITION	CHARACTER	DISTRIBUTION
PRIMARY SECONDARY TECHNICAL OTHER	PUBLIC PRIVATE OTHER	G O O D F A I R P O O R	R U R A L U R B A N	BY GEOGRAPHICAL DISTRICT OF THE COUNTRY

B. ASSESSMENT OF NEEDS

The assessment of the country's needs in educational facilities is a basic prerequisite for the further elaboration of the problems. The magnitude of the needs defines the magnitude of the problems and directs the search for efficient utilization of the available resources and the overall policy. The general scope of the development of school buildings is to give to every pupil an equal opportunity to be accommodated in an efficient school. Therefore, needs do not refer only to the new educational facilities but they also refer to the demand of raising the existing facilities to the new standards adopted. Thus, needs must be assessed regarding the number of new pupil places required as well as the requirements for the improvement of the standards of the existing school buildings.

B. ASSESSMENT OF NEEDS



C. SCHOOL BUILDING STANDARDS

The final objective of a school building development scheme is the provision of educational facilities to the pupil population. These facilities must follow a certain pattern ensuring,

- a) their efficiency from the educational, functional and structural point of view;
- b) the maximum value of the money invested in them;
- c) their quality of offering equal opportunities to all pupils.

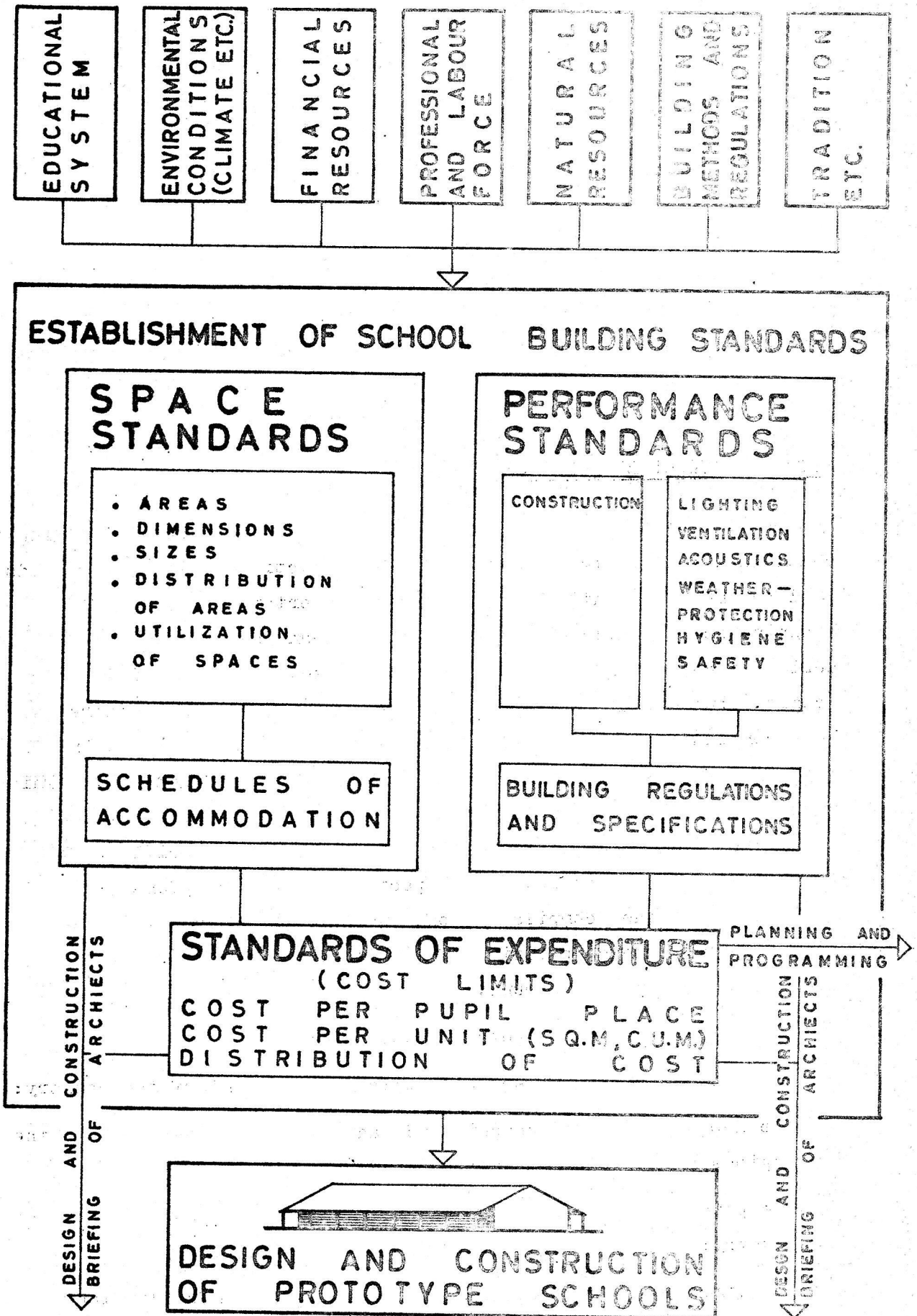
Educational facilities have different requirements in each country depending on the educational system, building methods and physical resources, climate, tradition, etc. It is therefore necessary for each country to study its particular requirements and determine the "standards" with which its school buildings must comply.

The school building standards can be classified under three major categories:

- a) space standards referring to the quantity of the school space, namely the requirements in areas, sizes and dimensions of the buildings as well as to their space composition and efficient organization;
- b) standards of performance referring to the quality of the facilities from the point of view of construction and materials as well as of the specific properties which ensure the proper environmental conditions, such as ventilation, sun protection, acoustics, etc.;
- c) standards of expenditure referring to the cost of the facilities as the result of the equation: quantity (space standards) x quality (standard of performance) = cost (standards of expenditure).

Since financial resources are usually limited, the standards of expenditure are in most cases predetermined with the result that adjustments must be made to the two other members of the equation in order to comply with the available financial means. This calls for the study of various alternatives of space and performance standards in order to make the necessary compromises. Variations of standards of expenditure must also be studied in order to allow the competent authorities when formulating school building programmes to choose the standards suitable to their policy, taking the decisions which affect the standards of the buildings and the time required for the implementation of the programme.

C. SCHOOL BUILDING STANDARDS

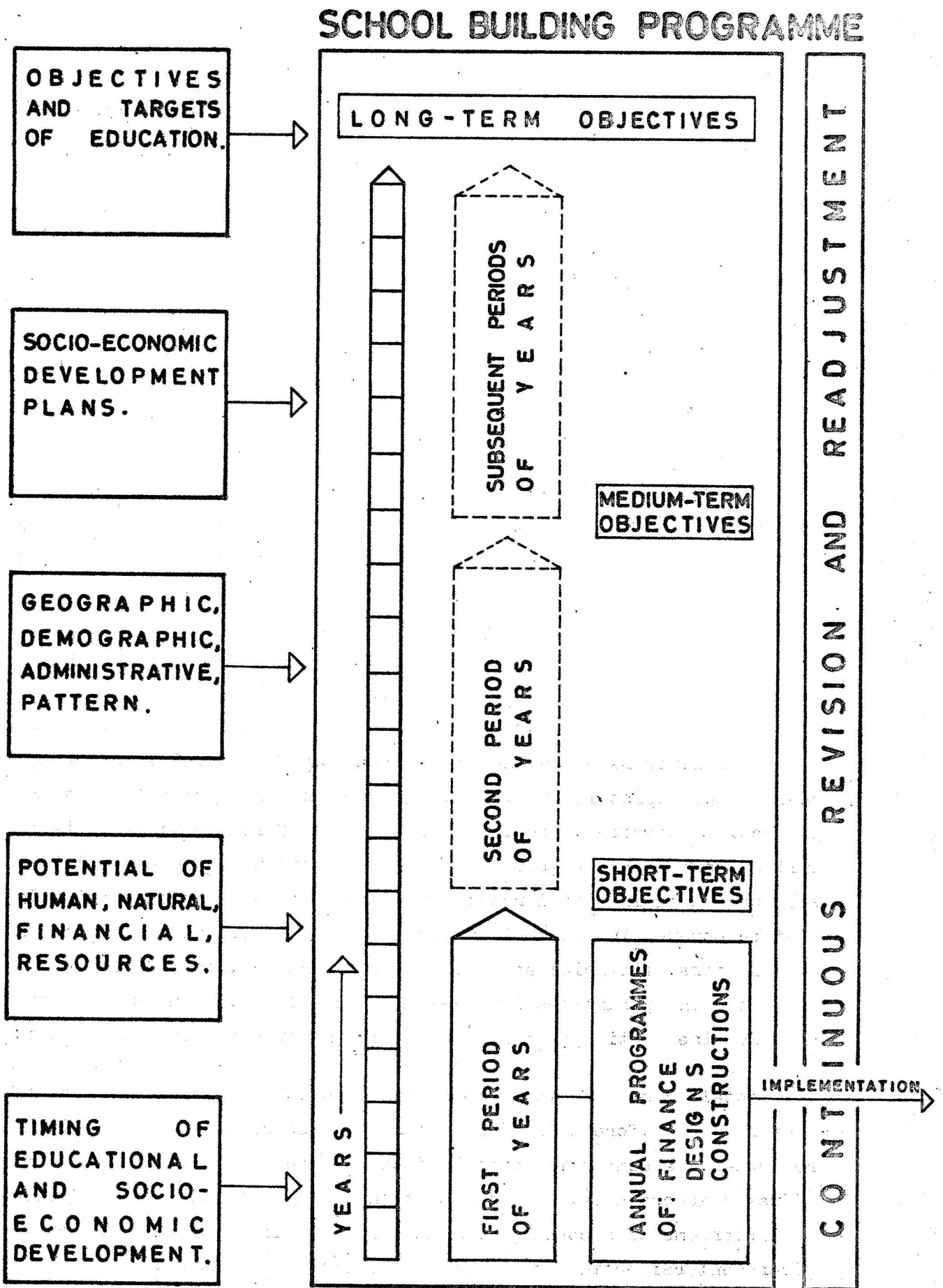


D. NATIONAL SCHOOL BUILDING PROGRAMMES

A major operation such as the development of school buildings requires a coordinated effort, a plan of action defining how needs will be met on a national scale over a certain period of years. Planning school building does not merely mean the establishment of a series of dates and figures forming a fixed and inflexible programme, but the development of a framework within which there will be a continuous process of readjustment and revision based on the progress of work, current changes and future requirements. This framework will refer to over-all, long-term projections covering 15 to 30 years divided in shorter plans with a more specific plan for the first number of years. The specific short-term plans will form the basis for the compilation of annual programmes of design and construction. The compilation of a national school building programme must take into account:

- a) the objectives and targets of education;
- b) the plans for the socioeconomic development of the country;
- c) the geographic, demographic and administrative aspects of the regions and the country as a whole;
- d) the potential of human, natural, and financial resources of the country;
- e) the timing of the educational and socioeconomic development.

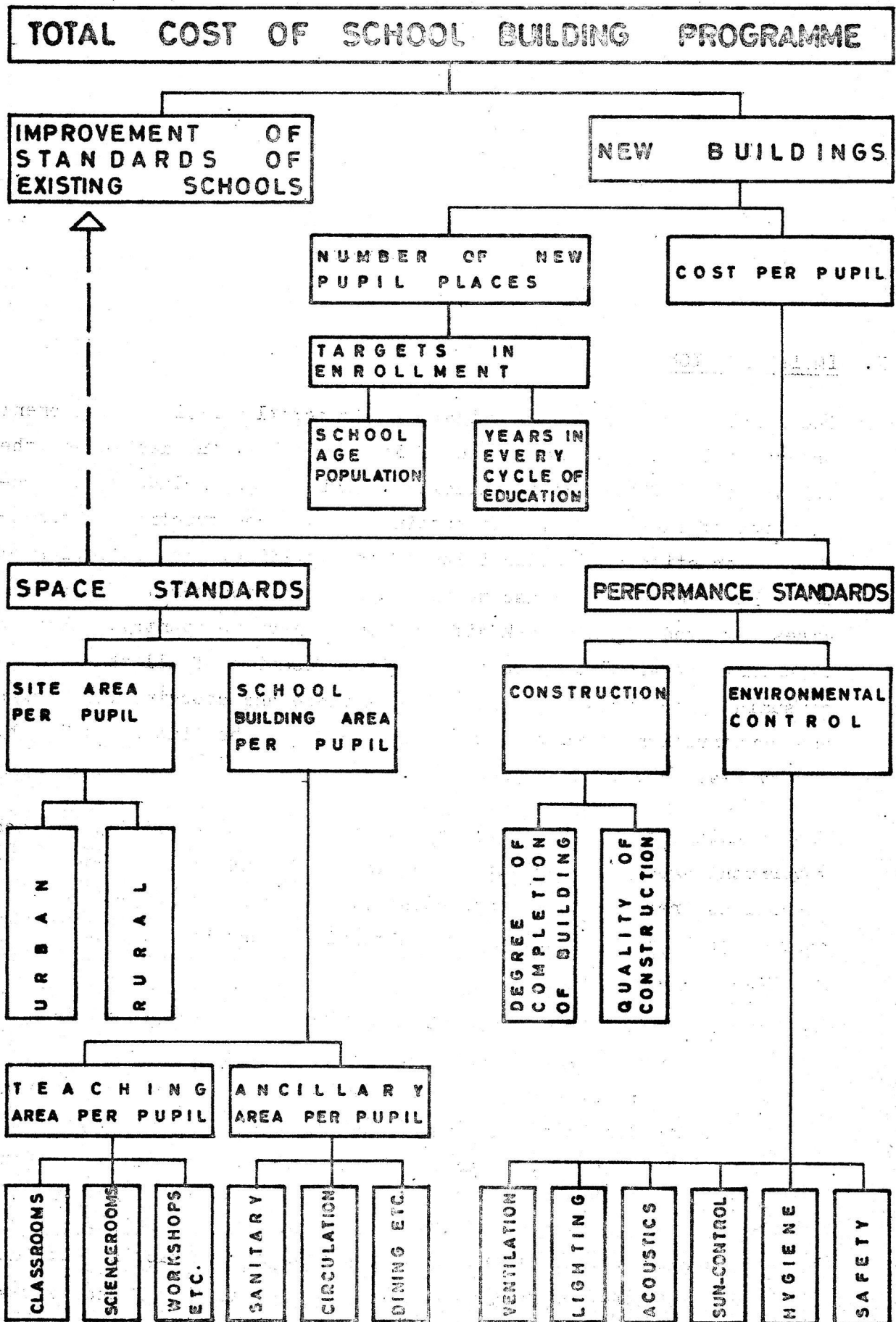
D. NATIONAL SCHOOL BUILDING PROGRAMMES



School building is a continuous process and a relative programme shall always exist in every country even when its present needs are perfectly satisfied. In the case of the African countries it is quite sure that a programme for the development of school buildings will be facing in its largest part, present needs which obviously must be covered in the minimum possible time. This time depends on many factors, financial as well as administrative, technical, etc.. The two main parametres involved in a school development programme are the time anticipated for its implementation and its total cost.

The total cost of the programme depends on a large number of factors; therefore when it is determined according to the available resources, a compromise must be found between these factors and be adjusted accordingly. The formulation of the National School Building Programme of a country is the responsibility of the respective government reflecting its policy on educational matters.

ANALYSIS OF FACTORS INVOLVED IN THE TOTAL COST OF A SCHOOL BUILDING PROGRAMME



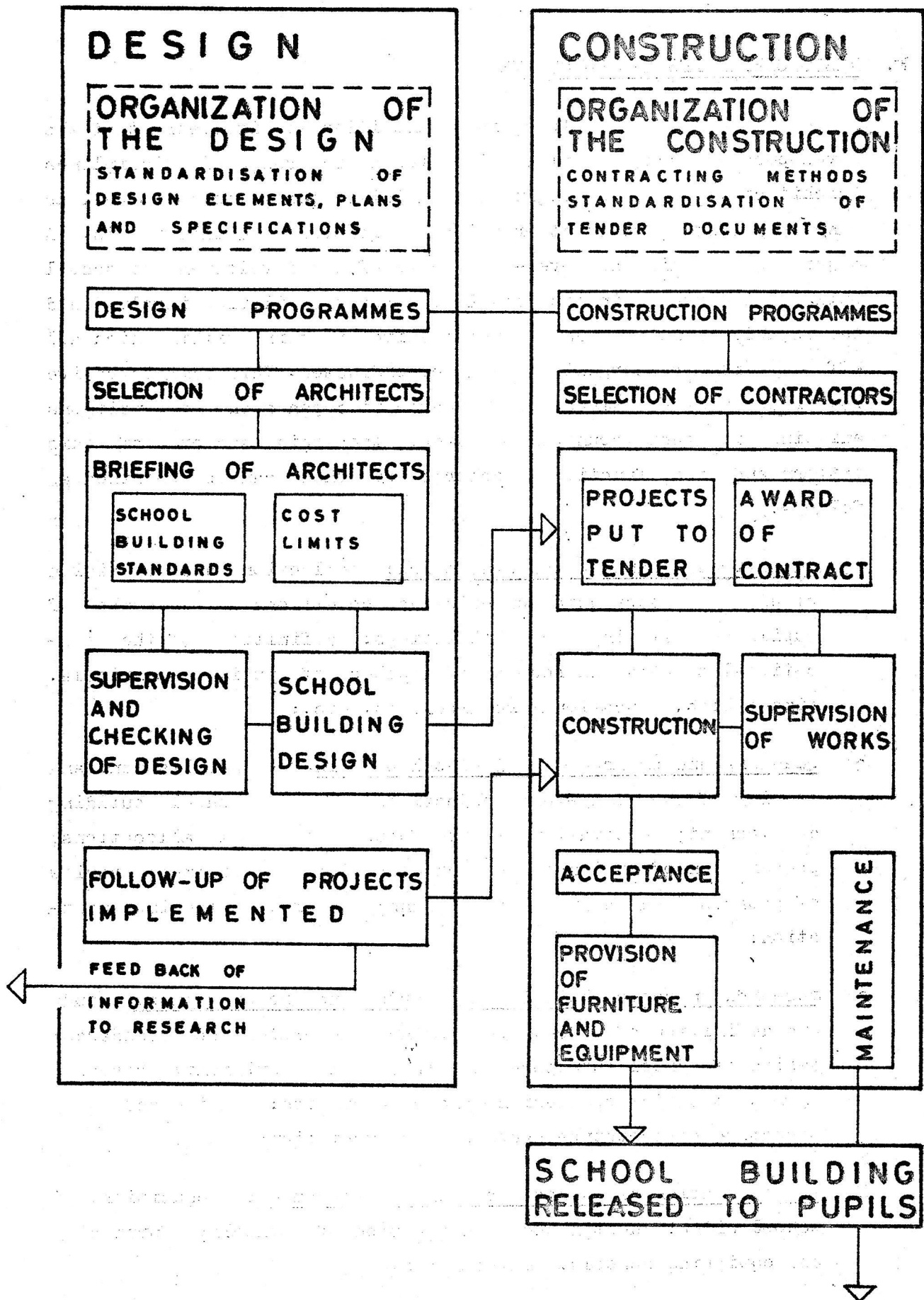
E. IMPLEMENTATION

The final step for the realization of a school building development programme is the implementation of its plans i.e. the design and the construction of the school buildings. This stage includes the preparation of the designs, the putting of the construction in tender the construction and supervision of the building, the equipping of the school and its release to the pupils and teachers. The procedures involved in this work differ from country to country. What is important for all countries is the simplification of all these time-consuming procedures and planning in advance and coordinating design and construction so that schools are ready in the time specified by the over-all development programme.

The organization of the work and the field of responsibility of each government agency or private individual depend of the particular conditions prevailing in each country. However there are certain common problems to which due attention must be given by every country. i.e.

- a) design: selection and briefing of designers; organization of the design according to the type and the volume of the required design work; i.e. standardization of drawings and specifications, standardization of design or building elements; supervision of the designs, control of the cost, checking of the designs;
- b) construction: selection of contractors; contracting methods; standardization of tender documents; supervision of the works.

E. IMPLEMENTATION

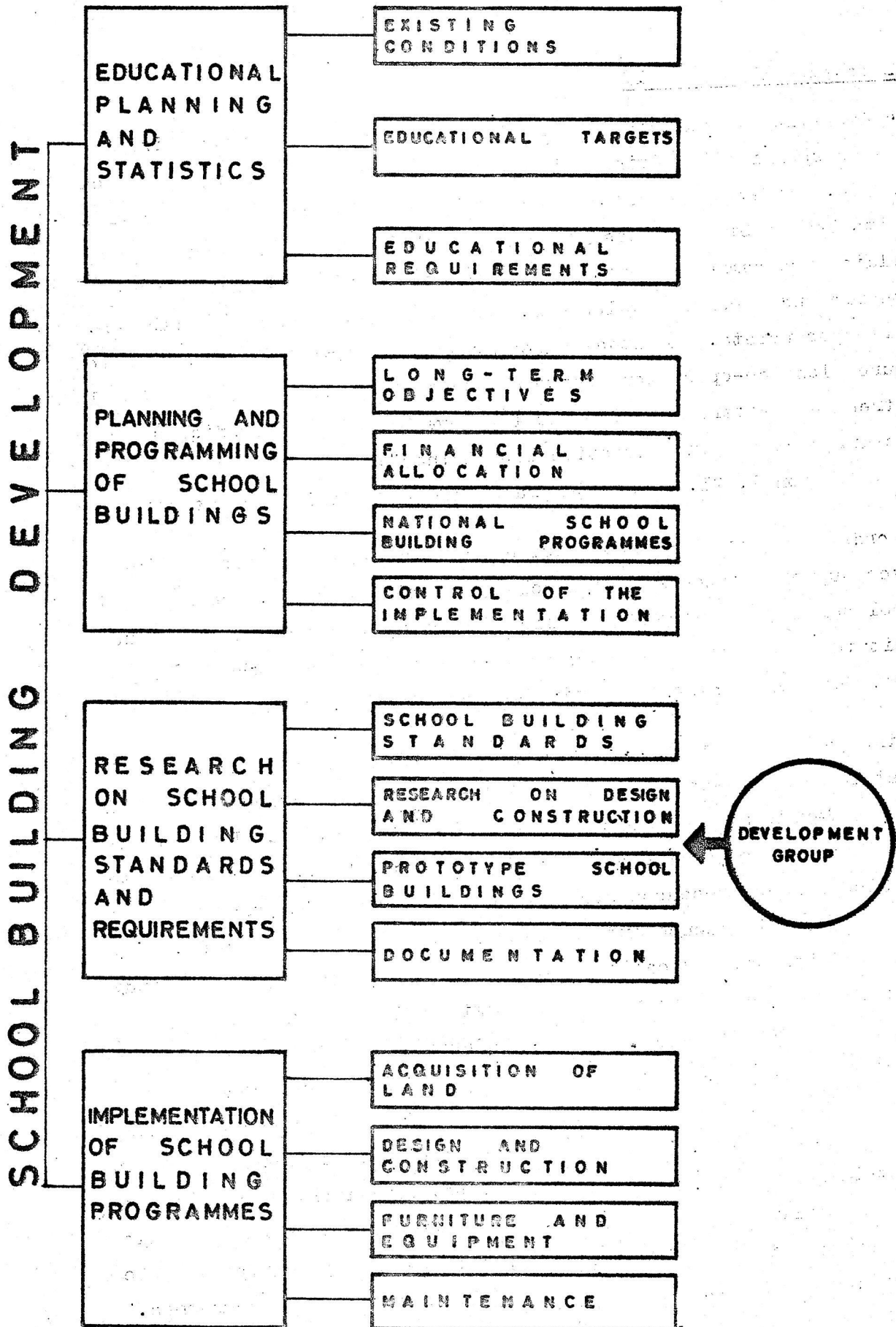


F. RESPONSIBILITIES AND FUNCTIONS

In the light of the foregoing exposition it is clear that the development of school building involves a wide range of disciplines (architects, educators, engineers, administrators, etc.) as well as many competent government or private agencies and individuals. A major task within the over-all scheme of the development of school building is the definition of all the responsibilities involved and the establishment of an administrative pattern within which all efforts will be organized and co-ordinated. This administrative pattern cannot be defined here because it depends on the conditions existing in each country. However, the main sectors of this pattern and the functions performed by them can be outlined as follows:

- a) educational planning and statistics: collection and provision of all necessary data on existing conditions, i.e. number of pupils and existing school buildings; definition of the educational targets in respect of number of pupils, curricula, time-tables, educational requirements, etc.;
- b) planning and programming of school buildings: establishment and costing of the long-term objectives of the school building development; estimation of the future financial allocations; preparation of the national school building programmes; review of progress and adjustment of plans; control of the implementation;
- c) research on school building standards and requirements: study and definition of space, performance and expenditure standards; design of school furniture and study of the equipment; research on new methods of design and construction; design and construction of prototype schools; documentation;
- d) implementation of school building programmes: acquisition of school sites; design and construction of schools; furnishing and equipping schools; maintenance.

F. RESPONSIBILITIES AND FUNCTIONS



THE DEVELOPMENT GROUP IDEA

The educational building development and its efficient organization is a responsibility lying with the respective governments of each country. However, Unesco interested in the advancement of education in its Member States, has invited them "... to develop educational building programmes to meet their needs as a part of their over-all economic and social development, and in particular to establish, where appropriate, national educational building centres, and to ensure close co-operation between national and appropriate regional centres in matters relating to the development of techniques and procedures concerning educational buildings".

(Resolution 1.221, Unesco General Conference, thirteenth session.)

In order to assist school building activities of Member States Unesco supports three regional school building centres, the Regional School Building Centre for Africa (Khartoum), the Asian Regional Institute for School Building Research (Colombo) and the Regional School Building Centre for Latin America (Mexico City).

A principal task of the Regional School Building Centres is to assist in the establishment of and to provide advice to school building development groups in each Member State. The Development Group idea and objective as set by Unesco is: "... to concentrate interdisciplinary research study on a single type of structure which will strongly influence future buildings of a similar type. By having architects, educationists, and cost experts jointly study materials, space requirements and construction methods, it is often possible to improve educational standards while lowering costs and increasing efficiency. The advantages of this close co-operation are those that come from each profession having a full understanding of the needs and limitations of each and their bearing on each other. By restricting work to a single prototype, experimentation based on clear objectives is encouraged. The final advantage of this technique is that problems discovered in the prototype can be corrected before they are multiplied in mass building programmes."

The Development Group procedures as described by Unesco are the following:

"1. Over-all plan

The educational authorities will determine the number of student places needed, the annual increase in places and the number of types of schools required. On the basis of these requirements and the total financial provision, a Development Group would work out a long-term building programme and, at the same time, establish the educational, building and cost standards for the type of school selected for development.

2. Research and prototype construction

The Development Group would also carry out studies for the introduction of new construction methods and new materials and products, preferably of local origin. In order to accurately evaluate the proposed new standards, construction methods and materials, etc., and thus ascertain the possible economy to be obtained, experimental prototype buildings should be erected before the launching of a full-scale school building programme. These prototypes should be carefully supervised, controlled and checked through all stages of their construction in order to check that the constructional methods proposed are effective and also to obtain records of activities involved. This will permit accurate and tested costing of the proposed project.

3. Organization and required facilities

These tasks naturally require the setting up of an office for the Development Group and the provision of draftsmen, supervisors and clerical staff must be foreseen. National school building units (if these do not exist, whichever Government Department at present dealing with school construction) should be the executive arm of the Development Group for the carrying out, after the prototype buildings have proved successful, of the full-scale programme."

of 1959

Looking back to the functions involved in the development of school buildings, it is clear that the Development Group idea covers a large part of the various sectors already described and particularly the sector of the research on school building standards and requirements which is the most crucial one involving special skills and extensive work. The formation of such a group within the government departments dealing with school construction will not only help to establish school building standards and prototype schools but it will also serve as a nucleus for the future development of a research unit which will deal with all problems related to educational facilities as well as of a planning and programming unit which will promote the National School Building Programmes.

(Faint, mirrored bleed-through text from the reverse side of the page, including phrases like "Development Group", "school building", "research", "standards", "requirements", "government departments", "prototype schools", "research unit", "planning and programming unit", "National School Building Programmes")

THE ROLE OF THE REGIONAL SCHOOL BUILDING CENTRE FOR AFRICA

The Unesco sponsored Regional School Building Centre for Africa will assist in the establishment of the Development Groups and give advice in the performance of their tasks and in the selection of prototype projects. The Regional Centre will document the work of the development projects and diffuse the results to other Member States in the region and to other centres. The work of School Building Development Groups, over and above stimulating development and economy in the country of origin, would be reflected, through the Regional School Building Centres, in the overall development of the region. Development Groups would also ensure that the best use be made of all types of external aid such as World Bank loans and Special Fund projects.

Furthermore, the R.S.B.C.A. will study the problem of the School Building Development and will work out general directives, collect information and data on the subject, compare the methods used in the various African countries and provide the Member States with the information available on the subjects.