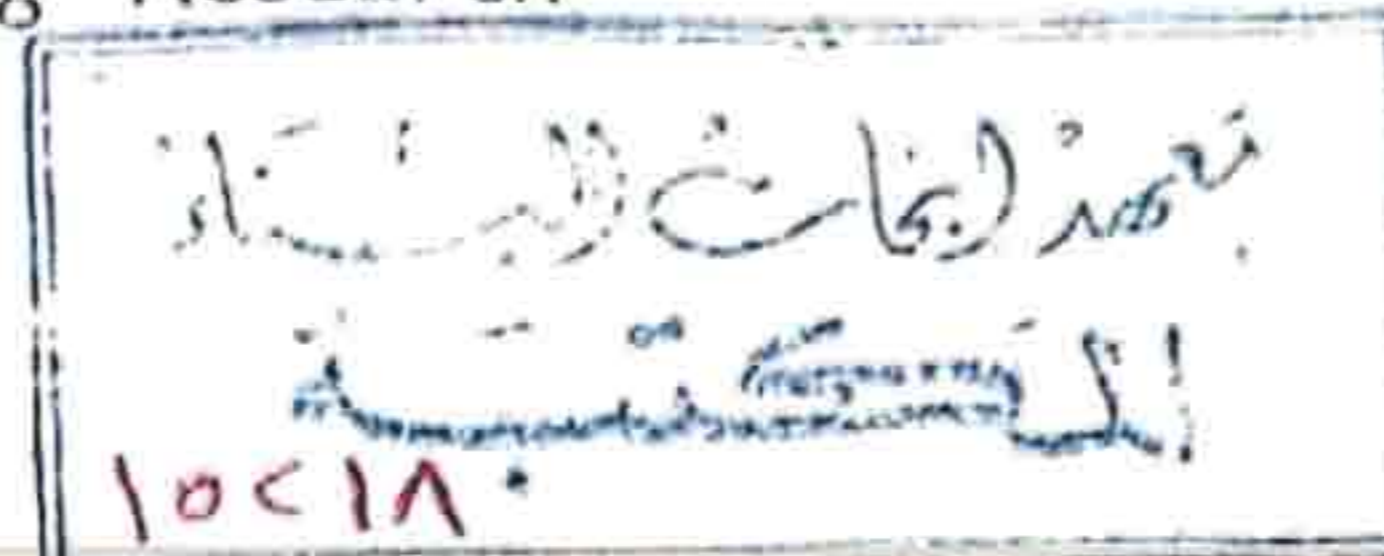




Asian Regional Institute for School Building Research

(sponsored by Unesco)

P. O. Box 1368, Colombo, Ceylon,



THE DESIGN OF ONE AND TWO TEACHER MULTI-GRADE SCHOOLS

PART I - GENERAL

1. Introduction

Many countries face the problem of providing educational facilities for children in sparsely populated rural areas. Two solutions are in common use :-

- (i) Daily transportation of children from homes to school;
- (ii) The provision of small multi-grade village schools with one or two teachers.

In 1961 about half the schools in countries such as France, USSR, India and Afghanistan were small multi-grade schools and of these some 50% had only one teacher.

In 1970, 63.65% of all Indian primary schools had either one or two teachers (37.35% one teacher schools; 26.30% two teacher schools). Indian education authorities are among those undertaking extensive research directed to optimising the educational potentialities of this situation. Attention is being particularly directed towards:-

- (a) The teacher and his training for the special situations posed by multi-grade teaching and learning;
- (b) the equipment, much of which needs specially designing for use in small homogeneous or heterogeneous group work;
- (c) the buildings and furniture which must accommodate children of a wide range of body sizes and should be flexible enough to permit of arrangement and re-arrangement for a wide variety of teaching and learning situations.

This Digest attempts to describe the situation in the rural areas for those who have to design small multi-grade rural schools.

2. A Typical Visit to a One-Teacher School

"The driver of the jeep slows down, apparently for no reason. Suddenly he turns off the road with difficulty and you can see that you are now on a small track. From the ground you will conclude that the track is very seldom used by vehicles with four wheels. After a while you become very impressed by the capability of the driver and the four wheel drive vehicle. The driver tells you however, that at times during the year it is impossible to use the track.

This is the only way to the village with the one-teacher school. After a few more miles of an exciting and bone-shaking ride, you reach the village. The population is about 500 and nearly all families are engaged in farming. Most of the houses are made of mud and dung, but one or two are of soft brick. There is a small shop in the village with a stock of the simplest requirements. Mail distribution to and from the village is very irregular and no newspapers are available. You may, however, occasionally hear a transistor radio. The school is on the outskirts of the village, out of sight of the houses.

"You will usually find the teacher in the school; but as you have not announced your arrival, the teacher may have gone home to his village because of illness or for some other reason. There is no replacement.

"The school is built by the villagers using local materials and local building techniques. It is often well built but maintenance is badly needed. There is hardly any equipment. For the population of 500 you make an estimate of the children of primary school age. This figure does not correspond with the number of children you count in the school. Often the enrolment is only half of what it should be and the attendance may be only 70% of the enrolment.

"The children are sitting in groups arranged in grades. Grade I may have about 12 pupils while, in Grade II, there are only 2 pupils. There is little activity."

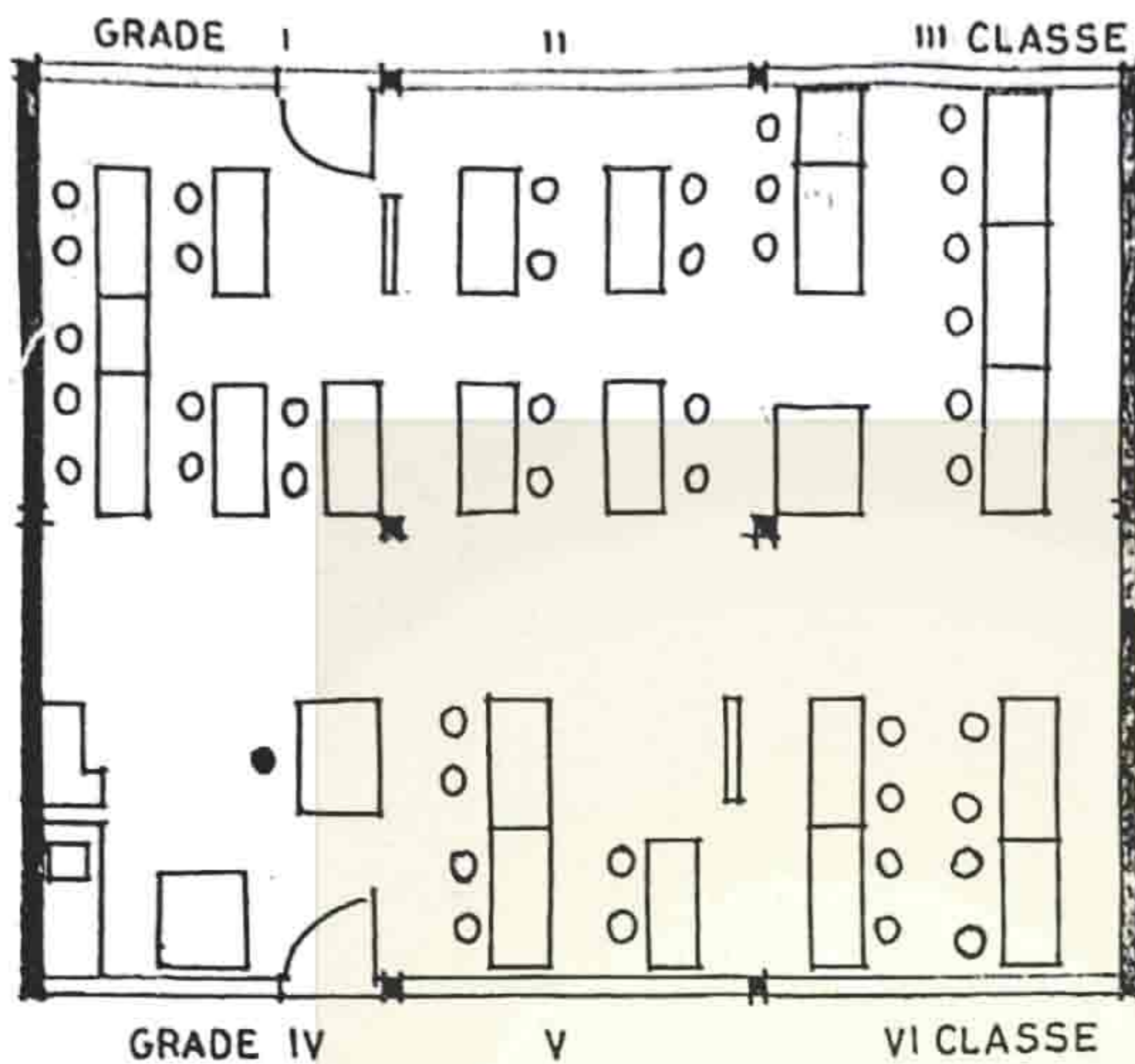
This description has been given as it provides an introduction to some of the problems behind the statistics mentioned above. There are, of course, in some countries, excellent and accessible one and two teacher multi-grade schools.

3. Educational Activities in the School

The main feature of schools with one or two teachers is that one teacher has to take care of several grades at one time.

This apparently difficult situation in fact lends itself to exploitation to the benefit rather than to the disadvantage of the children, for :-

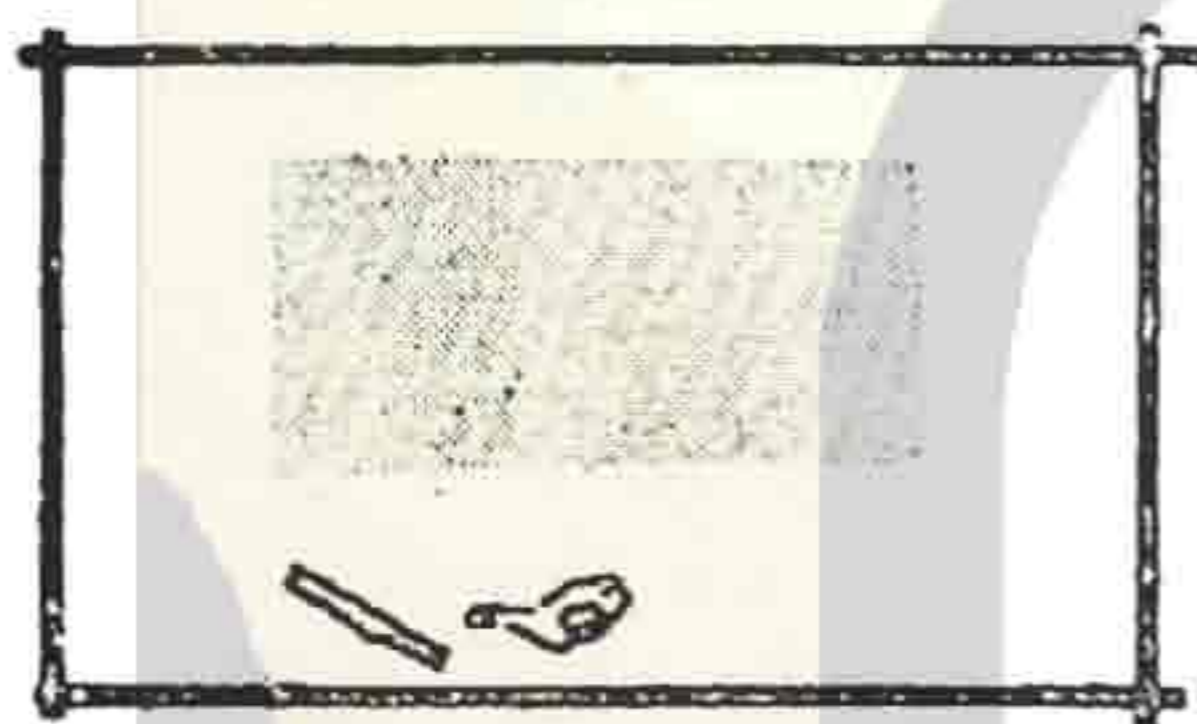
- (a) The size of each grade is small so that more individual attention can be given to each child in the grade. This is in sharp contrast to the situation in urban schools where the teacher has to deal with up to 50 children in one grade at the same time.



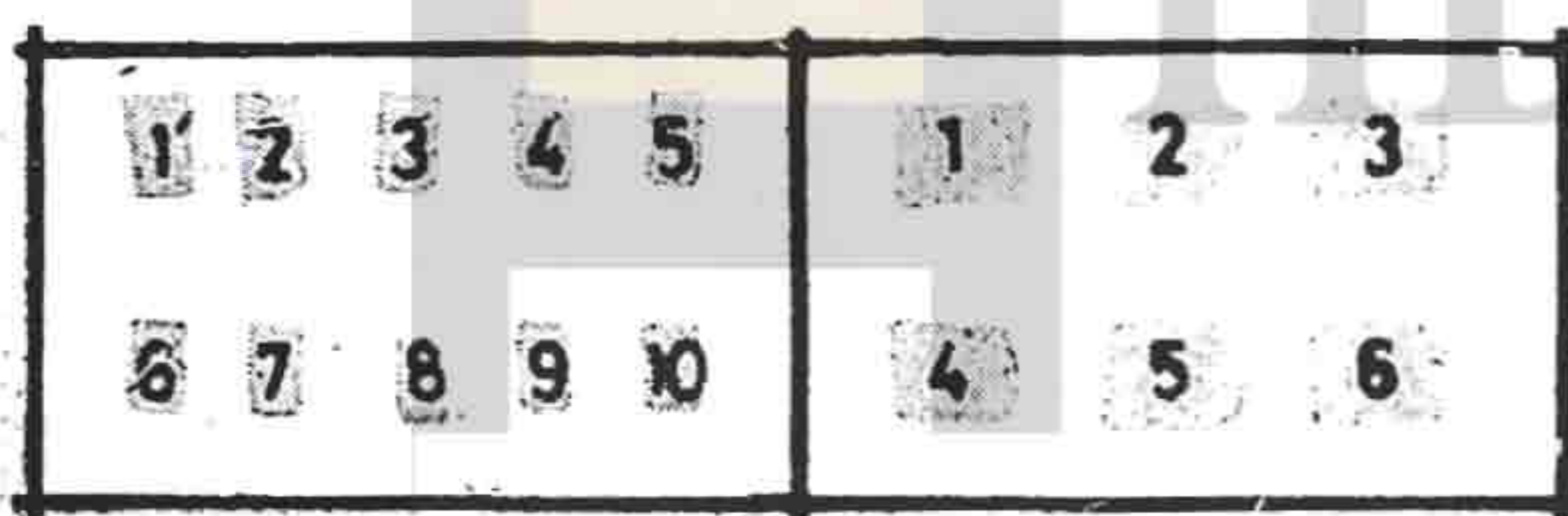
Formal Teaching Assignments

GROUPING BY GRADES FIG. 1.

SOMETIMES ALL CHILDREN FORM ONE GROUP

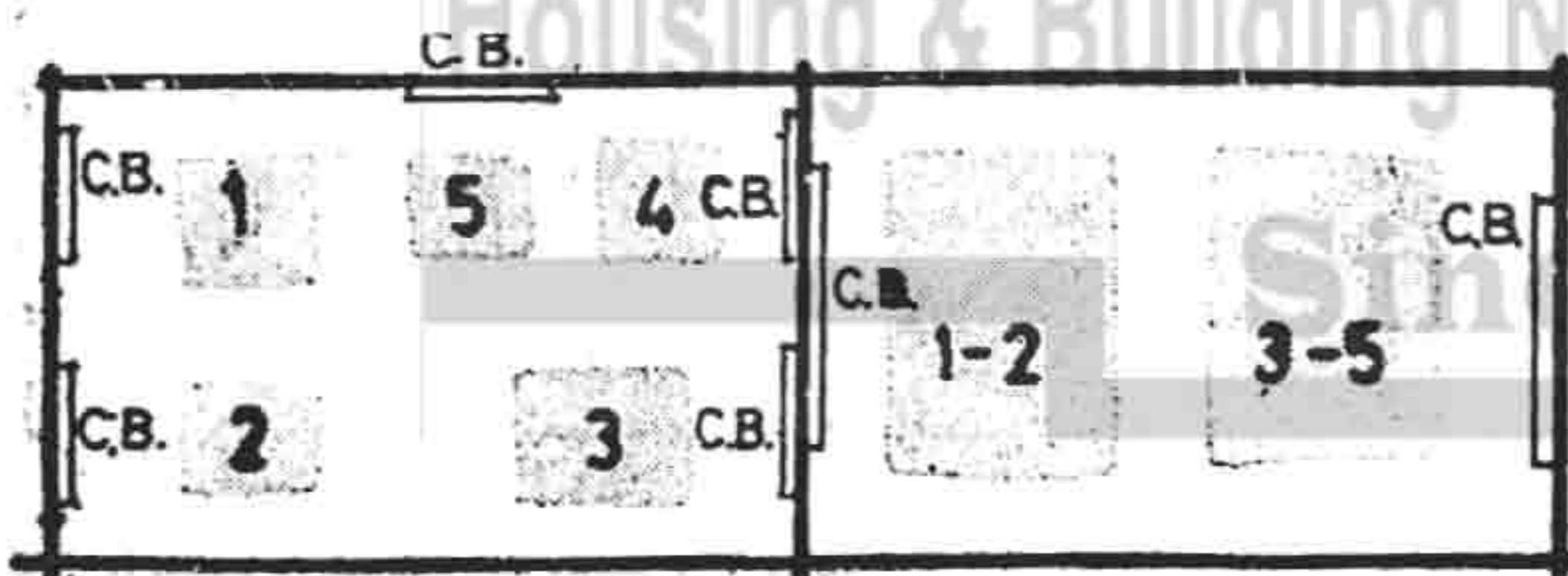


Assembly news reading etc.



Experimental Science, Handicrafts Etc.

GROUPING FOR ACTIVITY WORK



Gradewise (Maths Languages Etc.) Combination (Health Talks, Religion Etc.)

GROUPING FOR FORMAL TEACHING

FIG. 2.

- (b) Much of the child's time will be spent in individual study and the concept of "learning to learn" can, with skilled guidance by the teacher and an adequate supply of books and equipment, become a reality.
- (c) The heterogeneous grouping of children in a single space helps to promote a sense of community, can develop a co-operative spirit, discipline and provides opportunities for leadership.
- (d) Since much of the child's activities will involve individual study, as mentioned in (b) above, habits of self-reliance and of independence will be developed.

Successful teaching and learning in the one or two teacher, multi-grade school will depend to some extent on the skilful grouping of children. The size and character of the groups will vary depending on the activity, as follows :-

(i) **Grouping for "formal" teaching and learning**

Grouping may be by grades (see Fig. 1) using teaching schemes and text books that are designed separately for each grade.

For reading, religious and health instruction, the teacher may sometimes prefer to combine two or more grades. (Fig. 2)

An ungraded system is now being tried in Indian village schools in which a subject area is treated in sequential units without reference to age or grade, the child continuing with the next unit as soon as the previous unit has been satisfactorily completed. This has the advantage that each child can progress at his or her own speed.

(ii) **Grouping for activities**

Some sections of the schemes of work for small primary schools lend themselves to activity in heterogeneous groups. These activities may include assembly, cultural programmes, news-reading, games, radio listening etc. Group sizes may range from the entire school, for assembly and cultural programmes to groups of from about 4 to about 16 children for games, crafts and gardening (Fig. 2). An advantage of such grouping of children from several grades is that the older children may help the younger.

An example of the division of a small school into such groups or "houses" as they are sometimes called, is shown in Table 1.

TABLE 1 - DIVISION OF A SINGLE TEACHER SCHOOL BY GRADES AND HOUSES

Grades	Houses				Grand Total
	A	B	C	D	
i	5	2	5	3	15
ii	2	4	2	3	11
iii	2	2	3	2	9
iv	2	2	1	2	7
House Totals	11	10	11	10	42

(iii) Individual study

Learning assignments can be given in different ways. Reading or the solutions of arithmetic problems are common examples. It may be anticipated that, as schemes are developed, increasing use will be made of the ungraded system, mentioned above. If and when this occurs then for much of the school day, most of the pupils will be working individually. This could have an important impact on design.

4. Indoor and Outdoor Activities

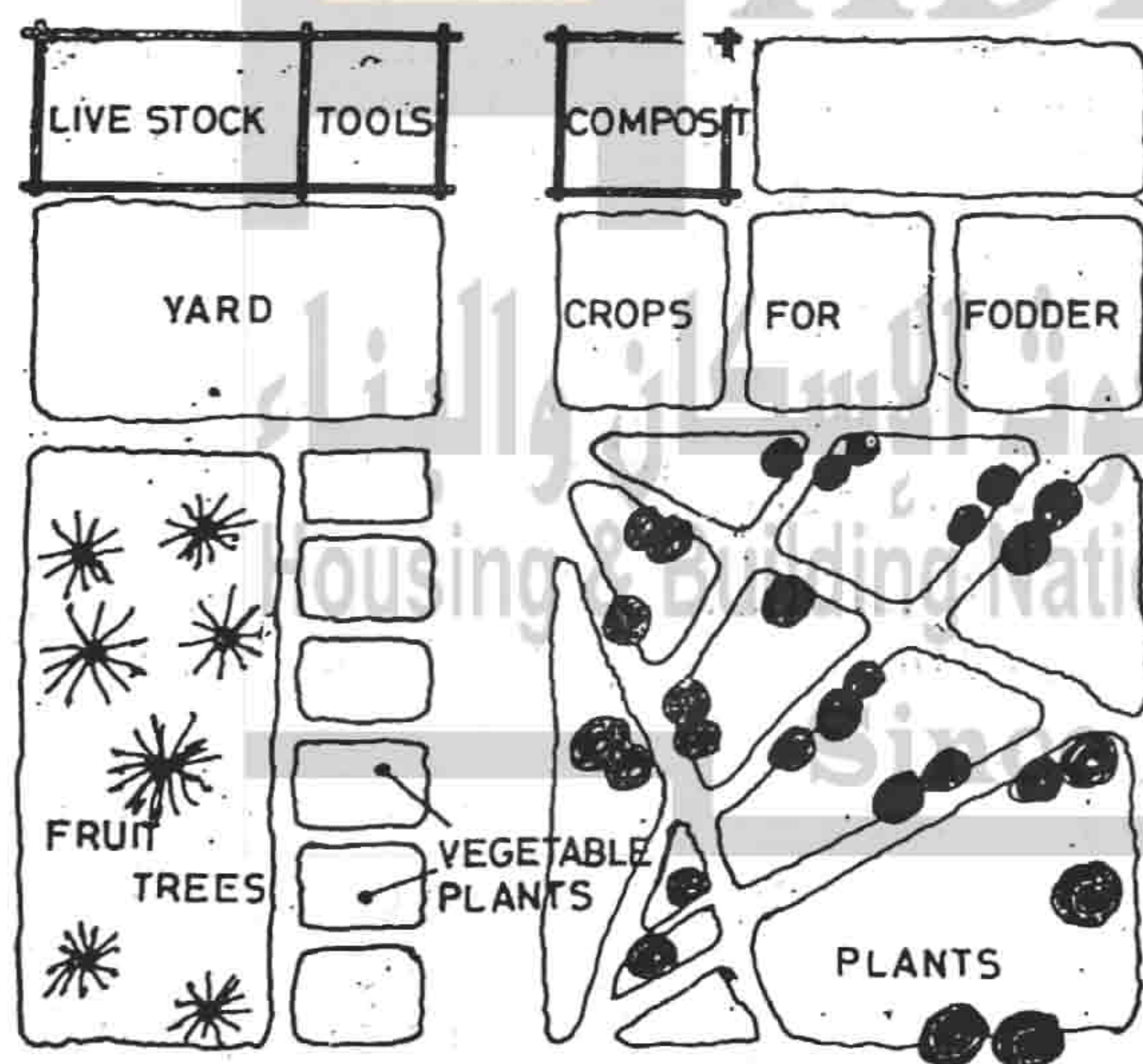
The rural school curriculum will usually be related in part to the rural environment and community needs, Subject areas such as rural science comprising gardening, simple animal husbandry and the like, thus form an important aspect of education in one and two teacher schools.

In such situations, the design of the site is as important as that of the building and proper provision should be made for the curricula needs – gardening plots, small orchard, space and accommodation for animals, space for composting etc. (Fig. 3).

In addition an area will be needed for games and perhaps for simple climbing frames and other apparatus required for physical education (Fig. 4).

5. Other Uses for the School Premises

One and two teacher multi-grade schools are usually to be found in areas where, due to the sparse population, education has not prospered in the past. Such areas will have a high proportion of illiterates in the adult populations and thus form a focus of attention for literacy and adult education work. The school may then serve, not only the young during the day, but the adult population in the evenings and at weekends.



A LAYOUT FOR A SCHOOL GARDEN

FIG. 3

Adult education covers a wide field of activities starting with literacy which may be made functional through education in health and agriculture. This involves not only provision for adult classes in the school building itself but also the provision of land for plots to demonstrate possible agricultural improvements.



MINIMUM AREA FOR PHYSICAL EDUCATION

FIG. 4