Each classroom has an exit for more flexible use out-of-doors.

Clerestory windows, light-colored ceiling and walls guarantee brightness.

Schoolroom protected, but not separated from outdoors.

Outdoor work space with overhang for protection from direct sunlight.

Photographs courtesy San Carlos and Ross Elementary Schools, California.
If we are to have adequate programs of learning, we must provide the quality of physical environment in which the learning activities of children can be functional as well as meaningful. Helen Heffernan, elementary schools officer, on the headquarters staff of General MacArthur in Tokyo, is now on leave from California, where she was chief, Division of Elementary Education in Sacramento. In her article, Miss Heffernan describes several schools which are providing the surroundings essential for the healthy "living and learning of children" and cites the progress which has been made toward achieving this goal of backgrounds for balance.

NO FIELD of educational endeavor has shown greater progress in recent years than that of creating an improved educational environment. In the past, two ideas have constituted serious obstacles to providing a suitable environment for the living and learning of children. The first may be called the teacher-on-one-end-and-pupil-on-the-other-end-of-a-log theory. This theory has acquired the acceptance of an adage in popular thinking, and like many other adages, it has provided a happy substitute for cerebration. When it is accepted, teacher and pupils alone constitute a school, and indifference to the facilities provided is the natural outcome. Too many monuments to this belief exist throughout the country to deny the strength of its influence. Generations of school children have suffered from unsafe, unsanitary, and educationally unserviceable school buildings because the importance of the educational facilities was minimized in the thinking of those responsible for providing them.

The second erroneous notion has been
that an architect, with the blessings of the board of education, was entirely qualified to provide the plans. As a result of this misconception, the country is dotted with buildings to which the local realtors point with pride but which are, too often, a source of frustration to teachers. Their forbidding and overwhelming appearance, no less frequently, frightens children.

Increasingly, educators and laymen are recognizing the importance of the environment in securing the fullest returns from the educational investment the community is making. Forward-looking superintendents and boards of education are providing liberal opportunity for collaboration between architect and teacher in planning functional school buildings. More and more, the nature and needs of children are considered and the buildings are being designed in terms of their usefulness to children.

Space Wanted

A modern program of education with its wide variety of activities, which constitute a comprehensive and well-balanced program, is dependent upon adequate space. The new thirty-foot square classrooms, made possible by the use of bilateral lighting, seem to be highly functional from the point of view of space. Workrooms or activity alcoves associated with the classroom increase the flexibility of their use. The outdoor terrace adjacent to the classroom with floor level of room and terrace continuous so that workbenches, block bins on casters, and other equipment may be moved out of the classroom affords a further extension of space available for study and play. Certain schools leave part of the terrace unsurfaced in order that children may carry on gardening activities close to their classrooms. These outdoor classrooms are being constructed with struc-
tural shelters or planting to protect children from prevailing winds, thus making them useful many more days in the year. Storage for articles ordinarily used out of doors, such as wheeled toys and playground equipment, may be a part of the structural shelter. A sturdy workbench with permanently attached vise also increases the usefulness of this desirable feature.

A word should probably be said about the value of utilization of the out-of-doors from the point of view of the health of children. Medical experts frequently deplore the fact that children are ordinarily kept indoors during the time the actinic rays of the sun are most favorable for health and growth. Full use of the outdoors should have measurable results in the physical condition of children and teachers.

More Light and Air

Modern architects advise a north orientation of all classrooms to secure a constant north light. Bilateral lighting is favored with glare-proof glass on the clerestories. The schools at San Carlos, California use this method.

Architect Maynard Lyndon has departed from traditional lateral classroom lighting in plans developed for the Saugus Union School, Saugus, California. An overhead skylight makes possible perfect natural illumination and even brightness in a classroom thirty feet wide. The skylight is louvered to shut out direct sunlight and an eggcrate baffle ceiling conceals the skylight. The louvered openings in such a classroom facilitate cross-ventilation.

The Ross School, Ross, California has equipped one classroom with fluorescent lighting. The cost of installation was expensive (approximately $1300) but the result was a classroom of

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1 "A Radical Departure in Daylighting." Architectural Record, XC (March, 1946), 120-121.
uniform brightness without shadows. Great progress is being made in classroom lighting. The use of electronic devices to turn on artificial light when natural light falls below an acceptable standard is now actually in practice in many new constructions.

Sound Is Diminished

Although the modern school does not reflect the sepulchral silence of other days, strain and tension are reduced by providing an environment which does not intensify the normal sound of children's activities. Ceilings in modern schools and sometimes walls are given acoustical treatment. Linoleum-covered floors help satisfactorily to solve the problems related to sound.

Heating for Children

From time immemorial, children have played on the floor. Its wide surface has always attracted children and invited them to its use. The new radiant heating by use of copper piping in floor slabs promises to make the floor a safer area for block construction, dramatic play, or even rest.

Housekeeping Made Easy

The housekeeping factor in a classroom is greatly reduced by the provision of adequate storage space. At the Ross School a carefully designed storage unit seven feet long contains a bookcase, a bulletin board, and a concealed storage space for wraps. Behind this unit, cupboards are arranged to the corner flush with the storage unit. Beneath the sink is a cupboard and next to it is storage for wet clay which is kept in a suitable container on a base with casters for easy movement. Heavy equipment, such as motion picture projectors, are similarly housed for easy movement throughout the school.

Nothing adds more to the comfort of teacher and children and to flexibility in the school program than carefully-
planned storage space for each particular item which must be stored. If food is brought from home for luncheon, as it is in many schools, a ventilated insect-proof lunch cupboard with a self-closing door will protect the food and eliminate one of the most unsightly aspects of the school environment. All cupboards and storage should be readily accessible to the children so they may secure necessary tools, equipment, and materials as they need them and thus grow in responsibility for putting such items away in good order for the use of others.

Desirable developmental activities are promoted through wise functional planning. If children are to construct, tools and materials must be readily available in response to their need; if children are to manipulate clay, it must be possible for them to secure wedged clay and clay board; if they are to paint, easels with a supply of paper and mixed paints must be at hand. If carrying forward these activities demands extensive and laborious preparation, many teachers will not provide environment for direct and expressive experiences.

Schools for the Community

Ideas are changing rapidly concerning the function and needs of schools. It is generally accepted that the school must provide a flexible environment in which children can use many media in the process of moving democratically in the achievement of common purposes. But education recognizes the need of providing the environment which will facilitate a two-way flow between the school and the community it serves.

The community school idea has gripped the imagination of socially-minded teachers. The resources of the community must be integrated into the schools. Schools must be planned to meet the needs of the pre-compulsory school age group for clinical, play group, and other services. Schools must be planned to include parents, with a room set aside for their use for study and conference. Schools must be planned for the use of all members of the community; the doors of auditorium, parent room, workshops, and laboratories should swing hospitably open to adults as well as children.

In order to realize the community school idea, schools should be built on adequate sites suitable to accommodate a program of physical education and recreation. One community has built its schools adjacent to its parks, thus facilitating dual use. Schools are coming to accept twelve-month responsibility for children and are acquiring camp sites as desirable adjuncts to schools.

The school is frequently the largest and most attractive building in the community. On the school, communities spend a considerable portion of their public funds. These facts make impressive the importance of close cooperation between architect and teachers in the process of planning.

The style of modern American school buildings is no longer being copied from the past or from other places. As they are planned carefully for the needs of the children and the community, they are becoming indigenous to the communities they serve, and endemic in our American culture. The educator, however, sees in the simplicity of the exterior, assurance that public money will be available to design the interior as it should be designed for children.