A model of the Acoma Elementary School under construction in Albuquerque is shown above. The roof lift-slab is the second one to be constructed in New Mexico, and the dome section is the first of its kind to be installed in the state. In this view, facing southeast, the administrative area is in the right center, the classroom complexes at each corner, and the all-purpose room under the dome. The smaller building at the left is a possible addition and is not included in the present project. Architects are Flatow, Moore, Bryan and Fairburn, Albuquerque.

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New Mexico Architect May-June 1959
Acoma School: State’s First Lift-Slab Dome

The Acoma Elementary School, now under construction in the northeast heights in Albuquerque, is a unique building in many ways.

It is the first New Mexico building to have a lift-slab dome.

It is the second New Mexico building to have a lift-slab roof.

And it is heated and cooled by air forced through trenches under the building — and ventilated as it is heated or air conditioned.

"We feel the building provides economy in construction and operation, as well as being able to maintain a good appearance with a minimum of maintenance," commented Jason Moore of Flatow, Moore, Bryan and Fairburn, Albuquerque, architects for the school.

The most apparent new feature in the building is the lift-slab roof, which is being raised in four sections over the 162 by 282-foot structure.

The procedure is this: after the concrete slab floor of the building was ready, paper forms impregnated with plastic were placed on the floor. The forms, made by Lawrence Paper Company of Lawrence, Kansas, are 30 inches square, and their shape gives the ceiling a waffle-like appearance—hence the name of the type of slab. Allowance was made for four skylights over each of the 22 classrooms, and the roof sections span 30 feet between heavy reinforced concrete columns.

After the forms were ready, the reinforcing steel rods were put in place. Then the concrete was poured around the rods into the forms.

The slabs now are being jacked up into position by the Vagtboard Company of California, specialists in this type of operation.

The four sections of the roof include two 81 by 162-foot slabs, each weighing 1,450,000 pounds; a smaller 120 by 42-foot slab, and the dome slab, weighing 1,620,000 pounds, which is set in a 105 by 120-foot roof section. The dome slab is heavier than the others partly because of the raised dome, which has a 30-foot diameter, and partly because there are fewer "waffle" sections and more solid sections in that slab.

The two larger slabs are at the east and west sides of the building, over classroom areas. The dome slab is in the south center part of the building, over an all-purpose room, the cafeteria, kitchen, and passageways; and the small slab is in the north center of the building, over the administrative area and the entrance to the building.

"A feature of the building I am particularly pleased with is the heating system devised by Bridgers and Paxton," commented Mr. Moore. "It’s one of the most ingenious things I’ve

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Acoma School
seen.” Bridgers and Paxton are consulting mechanical engineers in Albuquerque.

The system involves a series of trenches about three feet square running under the building. Hot water pipes were placed in the trenches—through which a man can crawl—to facilitate any repairs which might become necessary. Basically, however, the trenches are used to conduct air into the various rooms.

In winter, the air is heated by coils as it enters the classroom through registers in the floor. The rooms average two registers each, and each room has its own set of controls—which takes care of the common schoolroom complaint of too much or too little heat.

In summer, or when the building must be cooled, adiabatic evaporative coolers located in the mechanical rooms are put into operation, so that the air is cooled as it enters the trenches.

The Acoma School has no windows as such. It has floor-to-ceiling glass sliding doors facing the open-air walkways between sections of the building, and an average of four skylights per classroom, but no conventional windows.

The northwest section covers four classrooms, mechanical and storage space, and toilets. The administrative section, including space for a secretary and office, a book room, nurse’s room, teachers’ lounge and bathrooms, and principal’s office, adjoins the northwest section. An enclosed but uncovered teachers’ patio extends out from the teachers’ lounge.

The fifth major portion of the building is the all-purpose room, roughly circular, and the cafeteria kitchen, both in the south center of the building.

“The construction cost comes to about $8.50 per square foot of roof area. This includes the overhangs, so the figure doesn’t give the actual classroom area cost, but it still is a low figure,” Mr. Moore said.

K. L. House is general contractor for the building. The total cost of the building will be about $382,000.

Student Awards
year student in Architecture by the New Mexico Chapter, AIA (the scholarship to be divided for tuition for the first and second semesters): Leon A. Ross, Jr.

Tile Council of America’s awards to the winning students in a competition in architectural design: first prize, $25, Gerald P. Adkins; second prize, $15, Richard W. Waggoner; third prize, $10, divided between Lee A. Daily and John C. McKinley.

The Allied Arts Competition of the Illuminating Engineering Society prizes to students in Architecture for the winning entries in a competition in illuminating design: first prize, $25, to W. Miles Britelle, Jr.; second prize, $15, to R. Douglas Kelley; and third prize, $10, to Robert C. Ponto.