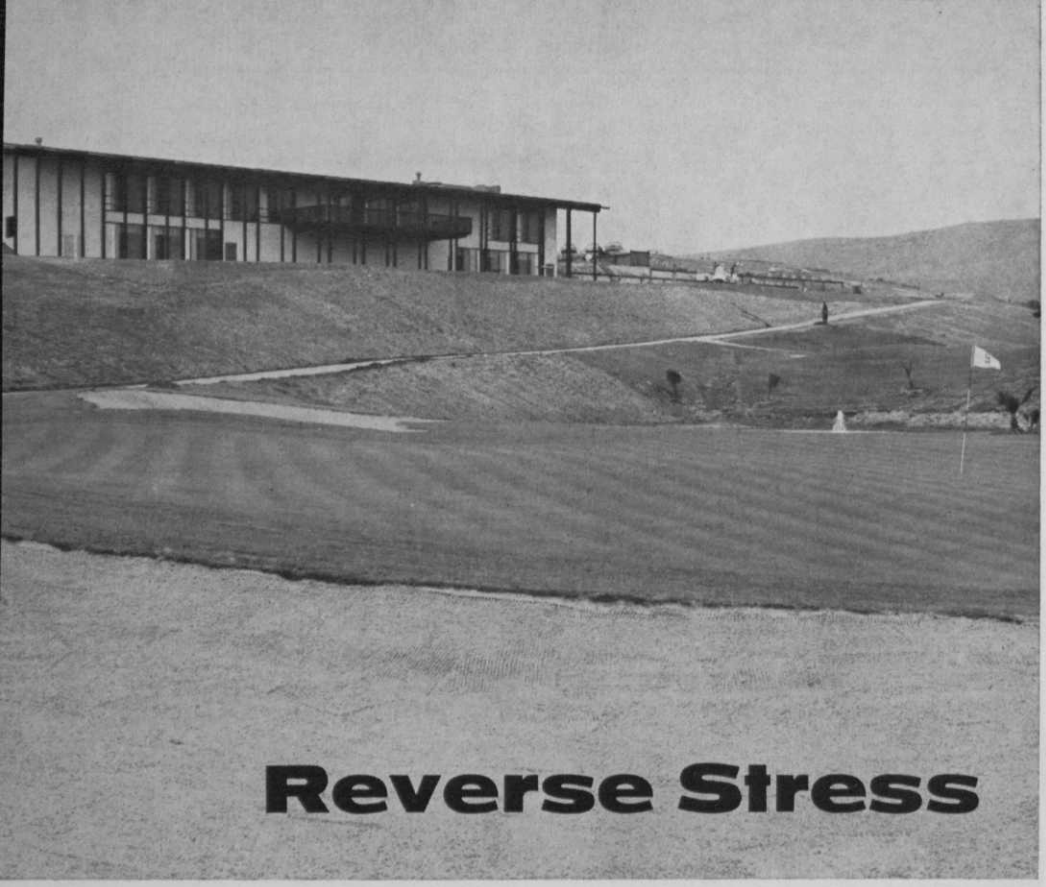


Reverse Stress

Architect Fred Hummel explains that posts are tied down by concrete bases because pull is upward and not downward. (Above) Saticoy clubhouse, situated on a hill ,is seen from sand beyond with green.

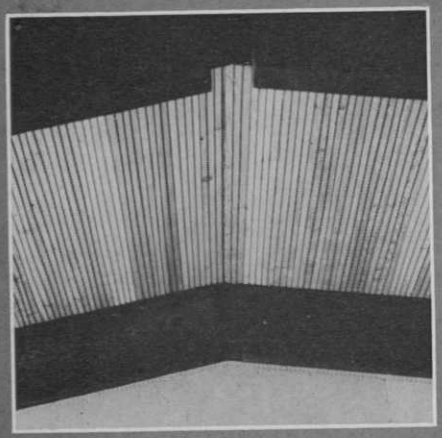
A California architect has used a different kind of a twist in the design of Saticoy CC's clubhouse .. . It keeps the weight off the walls, has eased the strain on building costs

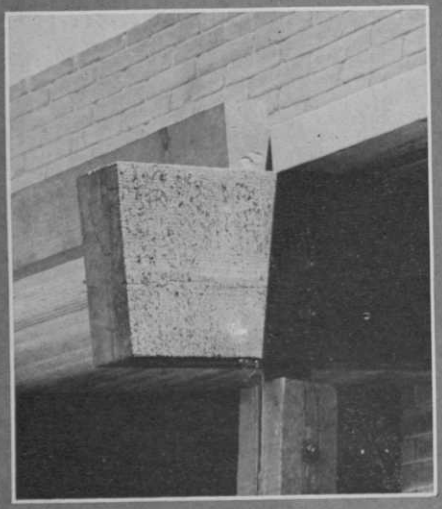
By M. MORRIS MOORE

Innovations in clubhouse construction at the new Saticoy Country Club, near Ventura, Calif., have resulted in savings estimated at about $50,000 in construction costs and perhaps even larger amounts in maintenance, according to Joseph G. Seward, club president.

The split-level clubhouse, completed in June, was built for $200,000, or $50,000 under original estimates. Total cost is about $13 per square foot.

Architect Fred Hummel, of Ventura, is the bright young man behind the dra-





matic savings. His innovations are in his words, "simply new applications of well known principles."

Reverse stress is the major innovation. Results of the reverse stress show in numerous places, and unless explained, look to the uninitiate like heavy beams and pillars resting on thin strips of steel.

Tie Units Together

Therein lies Hummel's method. The beams and pillars do not rest on the steel plates, and are not being held up by them. They are connected to each other by the plates and are held together by them. But the plates do not bear downward pressure. Rather they, in effect, keep the structural units from flying apart.

"This method makes the building stronger and more rigid," Hummel says, "and makes it easier to construct."

Hummel estimates that this method saved approximately $10,000 of the original $250,000 estimate, and cut construction time by two to three months.

Hummel explains "reverse stress" this way: "Most buildings rest their roof and ceiling weight on the outside walls, or on pillars. But in this building the walls serve as fulcrum points, and the pillars hold the roof beams down, not up."

Outer Ends Lifted

Hummel's unusual construction method calls for the roof beams to be joined at the center of the span with steel plates he designed for the purpose. There are no tie rods, no trusses, no ridge beams. The weight of the beams, plus the weight of the roof, pushes downward and the outside walls act as fulcrum points, tending to lift the outer ends upward – hence

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Grooved planking in ceiling of main ballroom at Saticoy CC (top) gives accoustical effect, provides insulation and doesn't have to be finished. Architect says use of this type of ceiling saved several thousand dollars in construction costs. (Center) Board on end of roof, at left, forms an "L" with roof. Metal gutter is nailed on top of the roof and against end board, as seen in photo. (Bottom) Outside pillars hold down overhead beams. If they supported roof load they would crumble. Beam doesn't meet post but is joined by a steel plate. Architect claims these features make clubhouse earthquake-proof.

Reverse Stress

(*Continued from page* 30)

the beams are held down by the pillars, not up.

"If the beams' weight were put on those steel plates they would buckle," says Hummel. "But since they are merely holding the beams *down* there is no problem."

Other Innovations

While the average visitor to the country club will quickly notice that none of the beams or uprights meet the ground, or each other, in direct contact, he is not as likely to notice some of the other innovations made by Hummel to cut costs in the country club.

One example is the numerous large windows which are set in aluminum sash coated with a special epoxy finish which can be damaged only with a sharp blow. The corrosion resistant epoxy will cut maintenance to a minimum.

Shower room maintenace, always a problem in country clubs, has been reduced to a minimum by Hummel's designing talents.

Don't Extend to Floor

The shower rooms are tiled from floor to ceiling. Stall walls have been constructed so that they end before meeting the floor, thus cutting down on corners which must constantly be cleaned and disinfected.

Nor are there any shower doors or curtains. Hummel has designed all shower stalls for complete privacy without use of doors or curtains, thus saving more money and maintenance time.

Interior construction innovations also include the attractive use of exposed natural finish, 2-inch redwood planks combined with adobe bricks to lend the lounge area an early California decor.

Grooved for Acoustics

Specially milled 4 x 6-inch cedar planks with three half-inch grooves cut into each make up the ceiling over the exposed beam construction in the dining room. The thickness of the wood provides both insulation and strength for the roof laid directly over it. The grooves are quite

attractive and serve as an acoustic ceiling as well.

The entire building was designed so that none of the windows which open to all directions is subject to direct sunlight during the heat of the day. This saves on deterioration of carpets and of furniture and other items which are subject to sun-fading.

Gutters Above Roof Line

Even gutters at the edge of the roof have received attention from Hummel. A board along the eaves extends above the roof line forming an "L" shape to catch rain. For now these L-shaped gutters have been fabricated of a light metal. When they have to be replaced, Hummel fully expects suitable plastic gutters will be available. Either way they can be replaced simply by lifting the old ones out and setting the new ones in. There are no unsightly gutters or spouts to mar the rugged beauty of the club house.

Posts Are Unfinished

The posts along the walkways around the building are all roughly finished so that if golf cars bump them or they receive other rough wear, there will be no maintenance problem except possible re-staining.

The clubhouse provides for lockerrooms on the lower floor, along with a barber shop, steam room, and mechanical room. On the upper level are the lounge, dining room, kitchen, snack bar, offices and pro shop.

Joe Seward says his club had to move from its old location because of a need to expand. It was hemmed in by roads on all sides at the old location.

"We could have built tunnels under the highways, of course," Seward said. "But the land adjacent to the club was priced at $10,000 an acre. We looked around and found this foothill land for $3,000 an acre. Now, where we had only nine holes before, we have 18 holes."

High On A Hill

The clubhouse is situated on a hill high above most of the course. Both the first and tenth tees are some 300 feet

When Fred Waring (l), owner of the Shawnee-on-Delaware Inn & CC, attended the opening of the Peace Pipe GC in Denville, N. J., he was inducted into Jersey's original Indian tribe, the Lenapes. Felix Marrick (center), president of the club, officiated at the induction. At right is Harvey Conley, Peace Pipe pro.

above the green. The first nine plays down a valley through a grove of eucalyptus trees then back up the other side of the valley to the clubhouse. The back nine goes up one valley, around a hill, and back down a second valley to the clubhouse.

On top of the back-nine hill a large number of homesites have been laid out. There are also homesites along the first, fourth and fifth fairways.

Rapid Membership Increase

The club increased its membership from 250 to 400 during the months immediately preceding the opening of the new clubhouse in June.

In its new hillside location, the club has established a driving range on the brow of a hill where the balls travel at least as far downward as they do outward. "Even the duffers get a real feeling of accomplishment as they watch the balls arch out into the valley," says Seward.

Missouri Turf Conference

The fifth annual lawn and turf conference of the University of Missouri, Columbia, has been scheduled for Sept. 23-24. Delbert D. Hemphill, professor of horticulture, is in charge of the conference.