



TOM KASSEL photo

Thermal shell homes or "foam domes" as they are called by their designer, Albert E. Moore, all have spacious living rooms with dome beamed ceilings as in the above house in Falls Village. At top left is the exterior of the W. Lycke's home in Cornwall, and at bottom left is the interior swimming pool which was added to the original thermal shell.

"After all, everything else is round—  
the earth, the sun, the moon. Why not houses?"

# 'Foam domes' have no angles

By ROSEMARY JACKSON

When his homes are called "ugly," and they often are, Albert E. Moore contracts. "They are just unfamiliar."

In addition to ugly, the homes have been described as looking like mushroom, igloo, whale, wisp's nest, and other things which Moore says he can't repeat.

But important to the designer is that more often than not they are compared to things "natural." And that's the whole idea.

His round, thermal shell homes, covered with four-inch-thick polystyrene foam, do have what he calls "a natural shape," as opposed to the "hard-edged" shape everyone is used to in home construction.

Moore and his assistant, Anthony Chi, built their first thermal shell or "foam dome" in 1973 in Cornwall and have since completed five more in the Falls Village and Cornwall areas.

The two admit their homes, at least at present, are attractive to the more adventurous and sophisticated.

When people first became aware of the foam dome homes, they called the two men "weirdos," Moore says since the homes have been gaining media attention the label has been downed to "suspects."

The two have appeared on television and have begun to get inquiries from as far away as Utah. Moore, who sports a big, white handlebar mustache, now gets called upon to speak to organizations in northeastern Connecticut about his super energy-efficient homes.

Years ago he played professional football with the Chicago Bears, and he is an artist with a long, successful career as a fashion illustrator. His work appeared on the covers of all the leading women's magazines and at one point on the inside of Esquire, the leading men's magazine. For many years he was responsible for the drawings of the Esquire girls.

He and his wife lived in New York City and had summer homes at various times in Kent and Falls Village. They now live year-round in a converted barn in Lakewood.

"If we didn't like it so much we would move into a foam dome," Moore says.

He had the idea for dome-shaped homes about 20 years before they became a reality. The concept, he says, stems from the simple egg, whose shape allows it to contain maximum volume with minimum material.

He feels it is a more efficient method of containing a given volume than a box.

In addition, an egg shell acts as its own insulator, and although it can be cracked or broken, it cannot be crushed. So it is with urethane foam; it is a natural insulator and unable to be crushed.

He points out also that this is not the formaldehyde foam which reportedly has caused some ill health in occupants of homes insulated with it. He uses polystyrene foam, which, according to a 1981 report in the Journal of American Medical Association, has caused no problems to date.

The foam dome came into reality when Moore teamed up with Chi, who was raised in the building industry.

"I had the theory," Moore says, "and Chi applied it to the codes and the laws." Chi has a prosperous sign business at the northwest corner of the state and is also the building inspector for the area.

The foam dome system is based around a transparent net tension frame. The frame not only provides the engineered structural integrity, Moore says, but all the code acceptability.

The tension frame is fabricated and totally assembled in a folded position in a shop. It is then transported to the prepared building site and erected by unfolding until it is in its pre-determined three-dimensional tension position and fastened to its supporting system.

High tensile fiberglass mesh is then stretched and fastened over the entire frame and the foam sprayed into the mesh from the exterior to a four-inch thickness. The foam bonds the fiberglass mesh to the frame and forms the shell.

A one-inch-thick layer of fire-retardant cement is sprayed over the interior of the shell and the exterior is covered with a specialized paint which is moisture resistant and opaque to keep out ultraviolet rays, which are the only destroyer of urethane foam.

Moore estimates the cost of the shell alone, which can be put up on a concrete slab or over a basement, to be between \$14,000 and \$20,000. In reality the shell can be erected in three days, but it more often takes longer just to get all the mechanics coordinated. Once the shell is completed, it is up to the occupant to contract for the finishing work.

Moore calls the outer layer of foam the "most efficient commercial insulator." It makes the homes air tight and very energy efficient.

In addition, Moore says, the dome home has 30 percent less surface area than a conventional structure of the same volume. "The less surface, the less heat loss or gain."

The heating bill for the first year in their first experimental home in 1973 was \$165. When energy costs soared last year, the heating total in that home went to \$260.

It was built in Cornwall for Marjorie Page, who still lives there and says the home allows her to live within her means and give her an element of space, which is very important to her. "It's like having an open horizon before you." On the other hand, "It's cozy and living in it is 'hygge' and pleasure."

She admits it is a shock to visitors, who are all to rectangles, "but the house grows on them. After all, everything else is round, the earth, the moon and sun. Why not houses?"

It was the simplicity and low maintenance of Mrs. Page's home which first intrigued New York businessmen to W. Lycke. So much so that he contacted Moore and said "This is the kind of home I have to have."

Chi is built 1,000 feet above the Housatonic River on a seven-acre site in Cornwall and has a sprawling addition containing a sauna and a 30-foot-long indoor swimming pool. He claims his heating bill the first year was about one-third of the usual or about \$28 a month for heating, cooking, washing and the sauna. It is heated electrically through baseboard units, as are

all of Moore's foam domes. Last year Lycke's total energy costs were \$600.

All of the Moore-designed homes have a spacious living in the downstairs area due to the high dome ceiling, beams and balconies above the living room. To cut corners on Mrs. Page's home, the upstairs bedroom was eliminated and replaced with a small but adequate sleeping loft.

The newest foam domes have two baths and two large bedrooms with good size closets and attic areas.

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A recently completed foam home in Falls Village sits on a four-acre site and has two bedrooms, two baths and an attic area. Moore estimates a starter shell home can be put up for about \$26,000, leaving the occupant to expand it when finances permit.

## Foam houses without angles

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reached through ladders in the bedrooms. The ladders are large and sturdy and hang like decorations.

All are fully equipped with compact electric kitchens and free-standing wood stoves in the living room.

Lycke covered a portion of the concrete interior of his living room with paneling and added a deep, cold water pool in the downstairs bath, just outside of the sauna. Because his home and Mrs. Page's were prototypes they have spiral staircases lead-

ing to the second level. The newest ones have open stairways to meet the building codes for commercial dwellings.

Moore is convinced that his foam domes are the way to beat high energy and building costs. But whether there are enough adventuresome people around to be interested in his theories remains to be seen.

Perhaps he doesn't envision whole communities of families living in domes. At 72, however, he is thriving on his new career and seeing his 20-year-old ideas finally coming to fruition.