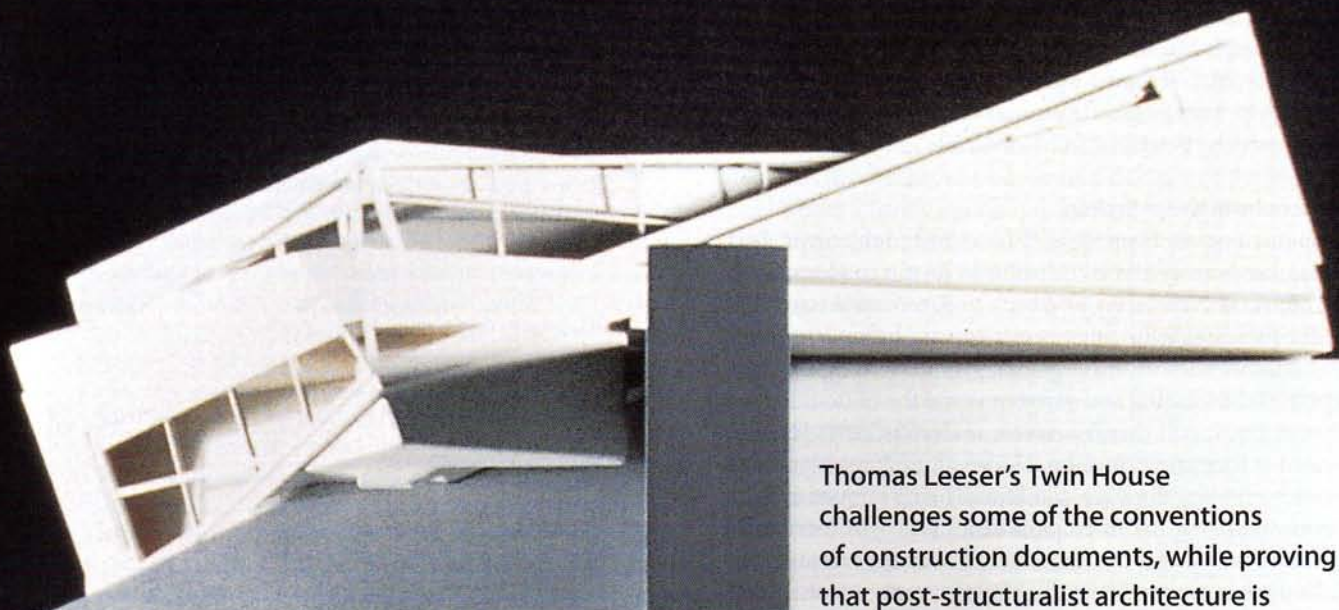
The Demanding Detail



Thomas Leeser's Twin House challenges some of the conventions of construction documents, while proving that post-structuralist architecture is eminently buildable. *by Thomas Fisher*

Architectural theorists rarely talk about the seemingly mundane subject of contract documents. But the Twin House, designed by New York architect Thomas Leeser, shows that the subject is ripe for discussion, that working drawings are architectural "texts" as worthy of critical scrutiny and as revealing of power relations within the construction industry as any building.

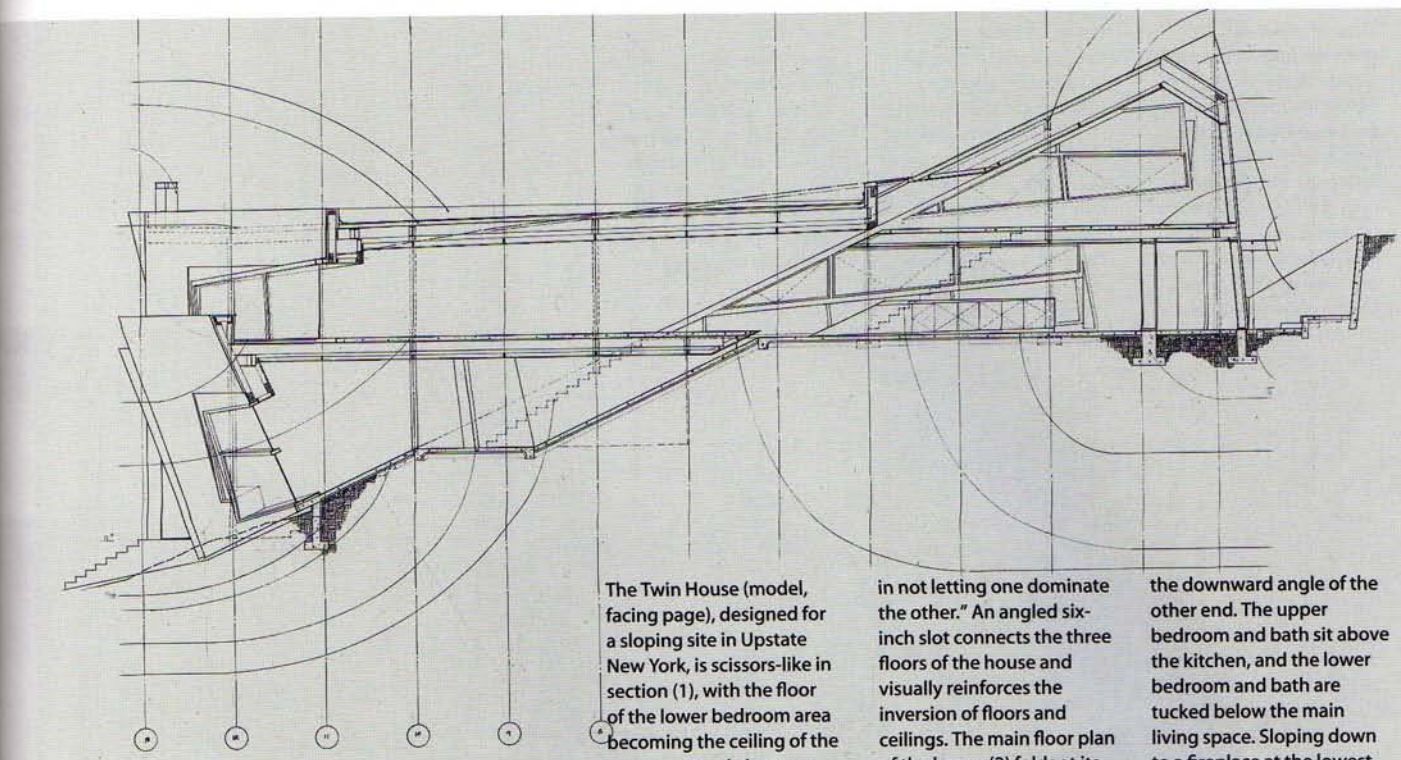
The 3,300-square-foot structure, commissioned by twin brothers, one an eye surgeon and one a brain surgeon, is hardly your conventional vacation house; its central kitchen and living area, flanked by bedroom/bathroom suites, is encased in a wood-plank skin that is folded, creased, and then draped over a steel frame. And the working drawings are no less unconventional. Although they contain the expected plans and elevations, wall sections and foundation details, many of the sheets look like fabrication drawings for an industrialized object rather than for a house. Enlarged plans of some parts of the house, for example, indicate every stud and angle as necessary to show how the sloping walls, floors, and ceilings intersect. Likewise, the complex window and skylight elements are drawn in axonometric as well as in elevation, "to help the manufacturer build them," says Leeser. An unusual design requires unusual drawings.

Or no drawings at all. "We had to build a lot of models," says Leeser, "to understand how parts of the house went together," and it was these models, says Jerome Leiken of Gryphon Construction, who estimated the job, "that were a tremendous help in coming up with prices." That, in turn, raises the question of whether, in this age of 3D software and automated modelmaking, buildings will be built more directly from physical and electronic models, with some types of working drawings dispensed with altogether.

Another question raised by this project has to do with the relation of architect and contractor. In some ways, the Twin House has been exhaustively detailed: each piece of the folded exterior wall, for example, is drawn in true elevation, like clothing patterns. In other ways, however, those drawings have an abstractness, suggesting that many details would be worked out during construction, which, says Leiken, is becoming the norm even for high-end houses. "We negotiate a lot of details with architects on site."

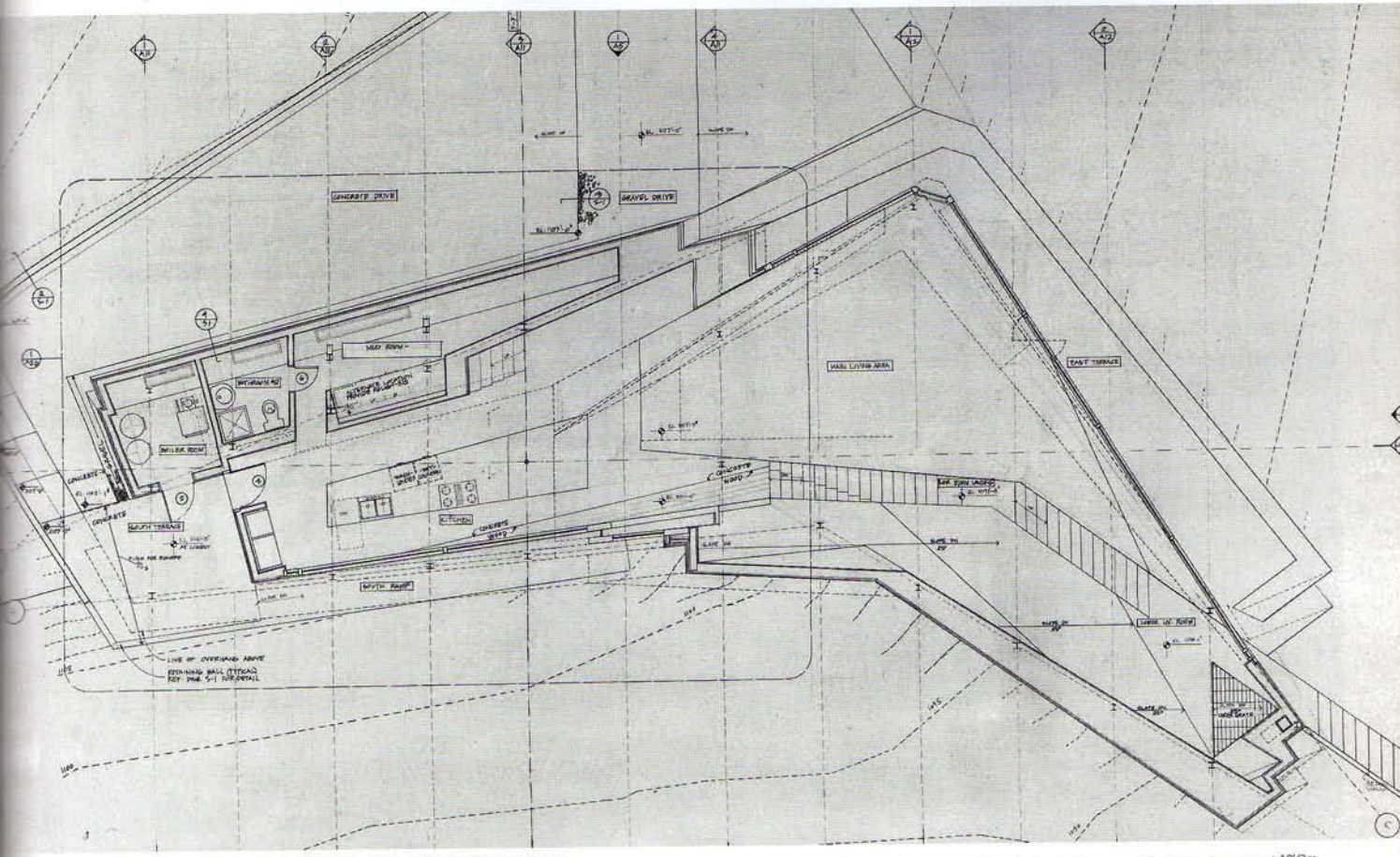
The project is currently on hold, although not because it couldn't be built. "I didn't find anything that wasn't buildable," adds Leiken. Nor was the $227 per square foot cost out of line for a house such as this. "Custom houses like this can range from $100 to $300 per square foot," says Jim Savio of Gryphon Construction, "depending upon their complexity."

Even if never built, however, the Twin House will remain a document of the dramatic changes going on in construction practices as well architectural design right now. It reveals the tensions that exist between old drawing conventions and new modeling techniques, between the old hierarchy of architect and contractor and new collaborative relationships, and between the old division of architecture from industrial design and a new blurring of their boundaries. Formally, the Twin House is one-of-a-kind, but pragmatically it may have many twins indeed.



The Twin House (model, facing page), designed for a sloping site in Upstate New York, is scissors-like in section (1), with the floor of the lower bedroom area becoming the ceiling of the upper one and vice versa. "I was interested in the psychological relationship of twins," said Leeser, "and in not letting one dominate the other." An angled six-inch slot connects the three floors of the house and visually reinforces the inversion of floors and ceilings. The main floor plan of the house (2) folds at its center into a shallow V, with one end of the structure, upwardly angled, inverting the downward angle of the other end. The upper bedroom and bath sit above the kitchen, and the lower bedroom and bath are tucked below the main living space. Sloping down to a fireplace at the lowest point in the house is a den, the house's "inferno," says Leeser.

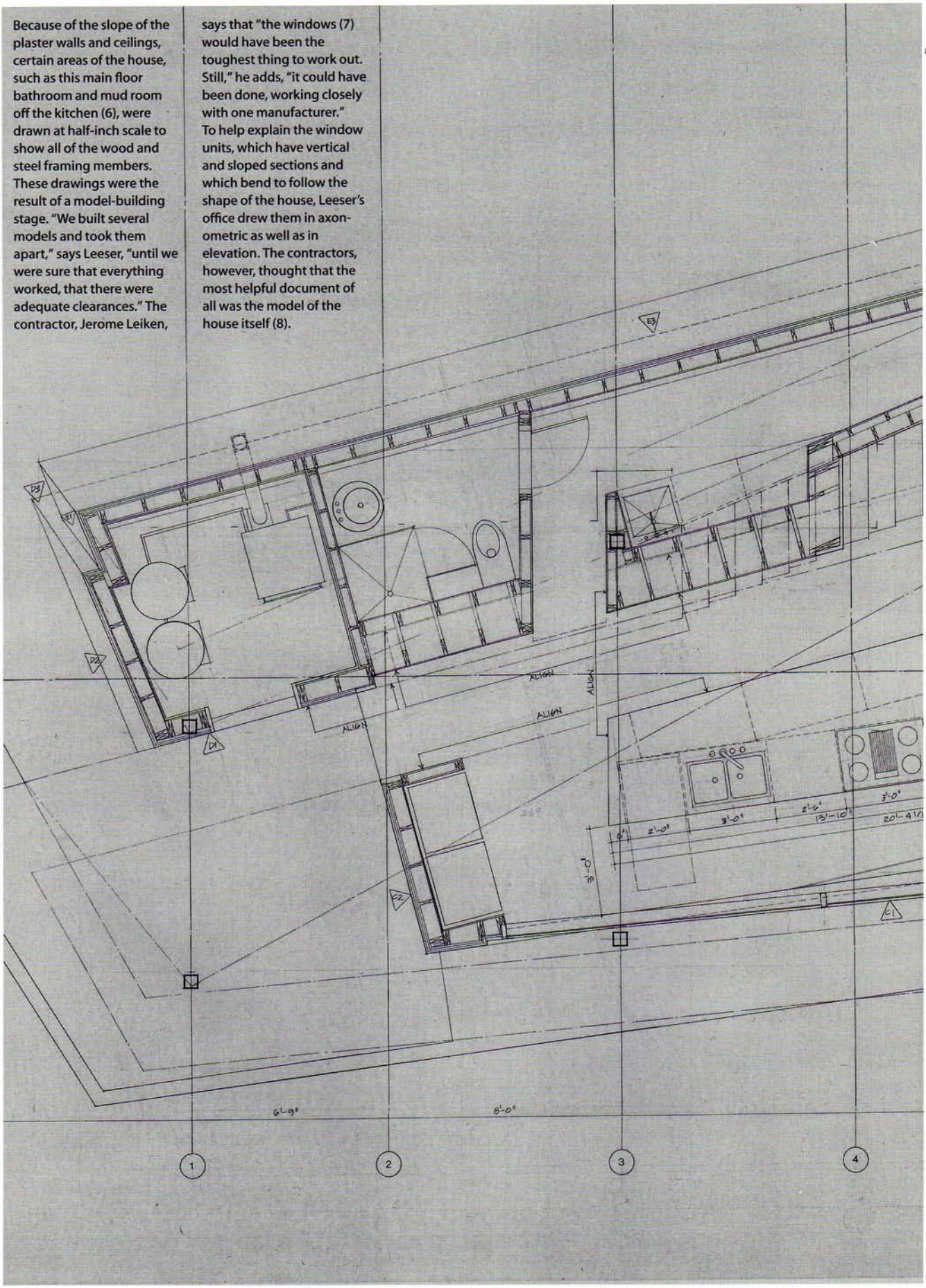
1 LONGITUDINAL SECTION SHOWING UPPER AND LOWER BEDROOMS FRAMING A CENTRAL LIVING AREA



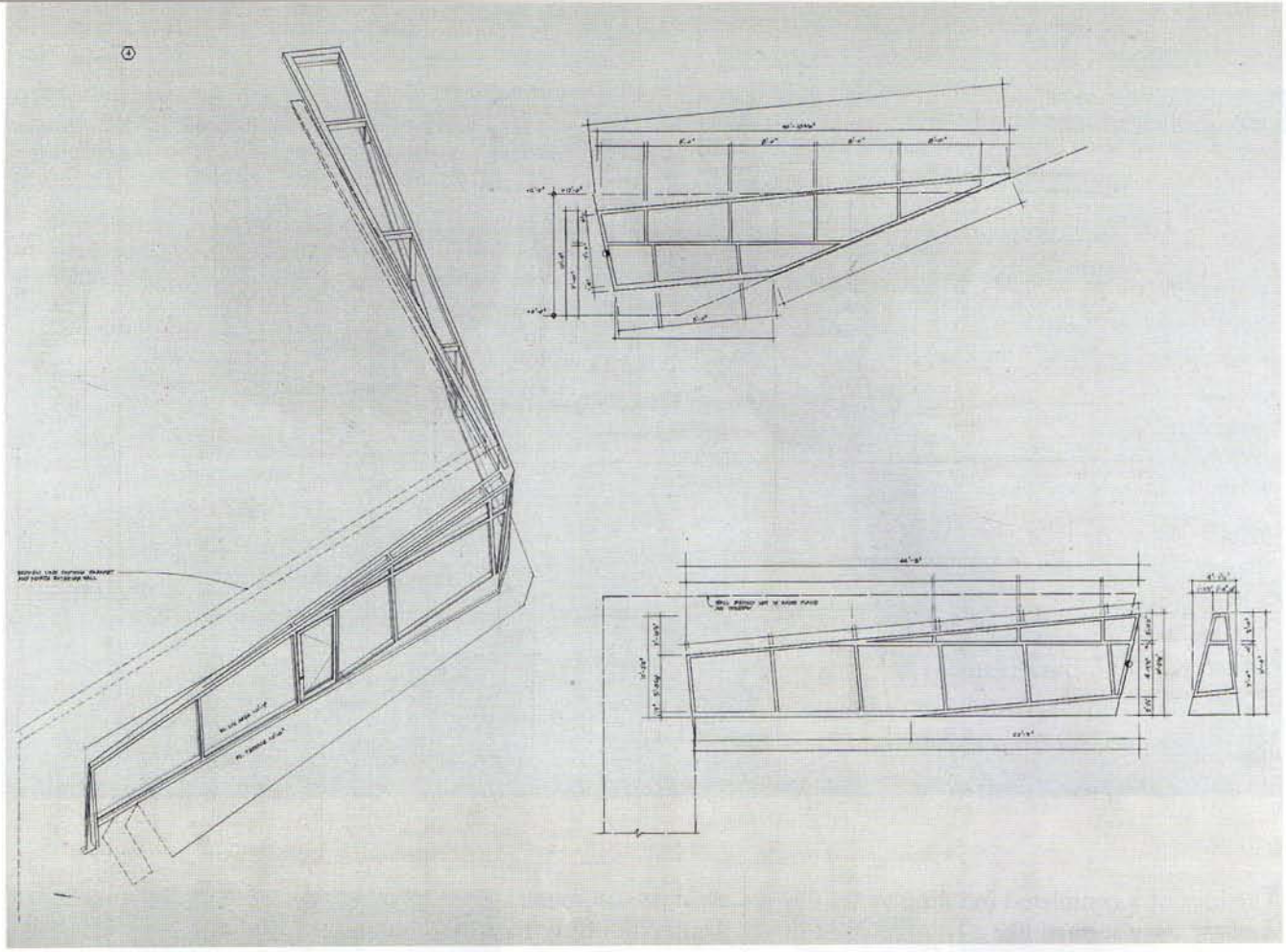
2 MAIN FLOOR PLAN SHOWING AN OPEN LIVING AREA AND SERVICES WING

10'/3m

Because of the slope of the plaster walls and ceilings, certain areas of the house, such as this main floor bathroom and mud room off the kitchen (6), were drawn at half-inch scale to show all of the wood and steel framing members. These drawings were the result of a model-building stage. "We built several models and took them apart," says Leeser, "until we were sure that everything worked, that there were adequate clearances." The contractor, Jerome Leiken, says that "the windows (7) would have been the toughest thing to work out. Still," he adds, "it could have been done, working closely with one manufacturer." To help explain the window units, which have vertical and sloped sections and which bend to follow the shape of the house, Leeser's office drew them in axonometric as well as in elevation. The contractors, however, thought that the most helpful document of all was the model of the house itself (8).



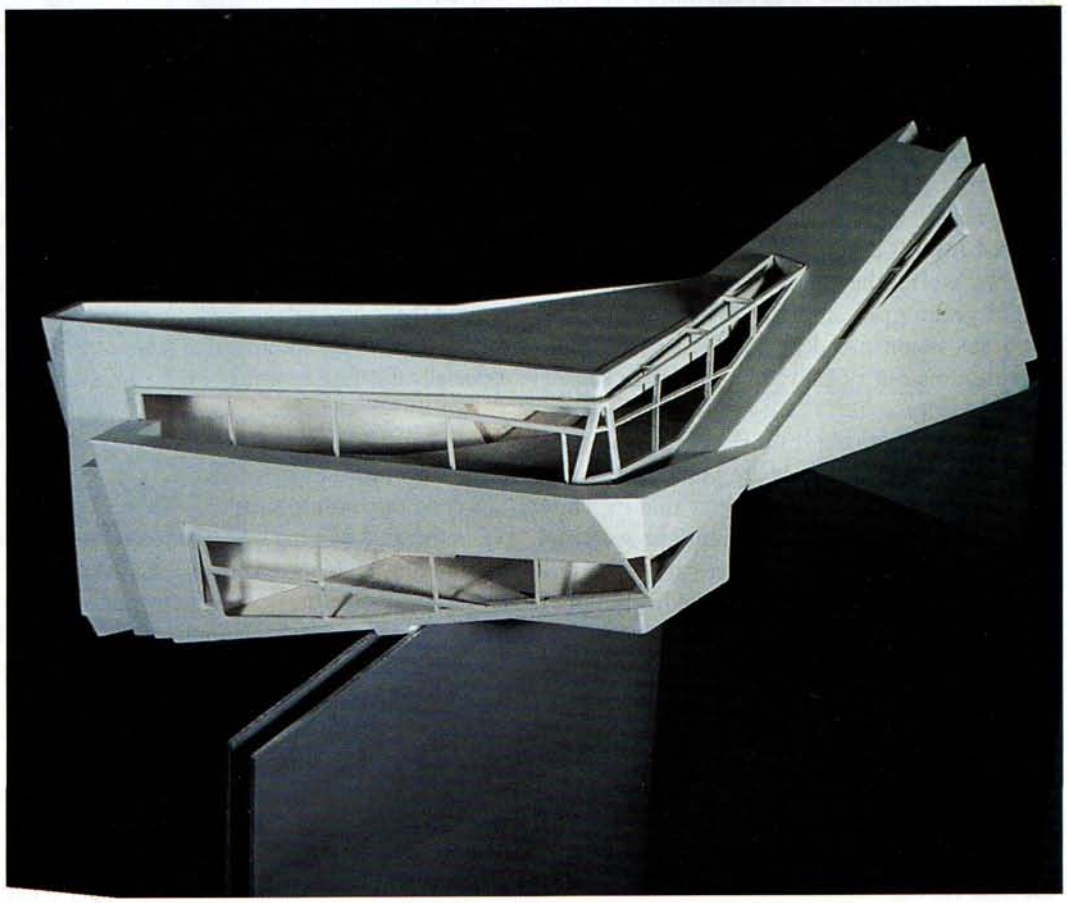
6 PARTIAL LARGE-SCALE PLAN INDICATING STRAIGHT AND SLOPING WALL FRAMING



7 AXONOMETRIC EXPLAINING WINDOW ASSEMBLY

DIMENSIONED WINDOW ELEVATIONS

Project: The Twin House, Liberty, New York.
Architect: Thomas Leeser, Architecture, New York (Thomas Leeser, principal; Bill Rockwell, Jörg Gleiter, Jennifer Hocking, Michelle Lederer, Cary Syress, Andrea Jütten, Juanita Cheng, project team; Ching-Wen Lin, Lea Mungone, John Cays, model).
Consultants: Guy Nordenson, Ray Crane, Ove Arup & Partners (structural).
Construction managers: Jerome Leiken, Jim Savio, Gryphon Construction.



8 MODEL SHOWING HOW WINDOW ASSEMBLIES FIT INTO THE GEOMETRY OF THE HOUSE