

現代世界建築選粹

現代美國住宅

No.1

Modern Houses in America

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Editorial

We are in the age of mass-communication when information can be transmitted instantly throughout the world. The architectural profession is ofcourse no exception. The architectural profession has been constantly changing, from a very nationalistic or individual expression to a mixed expression of the different ideologies reflected in today's rapid exchange of information, which is merely a thin layer of true reality.

The purpose of this issue is to investigate the current state of the architectural profession in america by concentrating on the house, since the house is the most appropriate vehicle for the expression of architectural ideas. We have decided to emphasize the private house in this issue without prejudice, ignoring the so-called "modern" or "post-modern" trends. We believe this is the time for us to reexamine the validity of certain predominant modern architectural statements made by only a few individuals in the entire architectural profession. We offer our readers an opportunity to look at modern architecture from the houses that were selected to offer the most comprehensive architectural expression from dif-

ferent points of view. We present, for example, the entrance, the central activity area of the house, the eating area, the resting area, as well as the materials used for varied architectural expression. It is in their interpretations of these important areas that the architects express their architectural ideas. We have tried to raise the questions which are vital today for those architects who have participated in this issue. We believe that the attempted solution to a particular area in the house is the beginning of the design process.

Most of the houses we have chosen for this issue are located in rural areas because such houses offer the architect greater freedom of expression. The participants in this issue have been selected because they came from many different backgrounds which have influenced the psychological or physical emphases they express in their interpretations of the house. The reader can make his own evaluation. Our duty as architectural journalists is to offer the knowledge which allows the reader to appreciate architect's response to different problems.

Ching-Yu Chang.

前言：

我們生活於大眾傳播時代，也就是情報資料立刻傳達整個世界的時代。當然，建築也不能脫離這種趨勢。建築在以往是國家或個人的時代表現，但是，目前已經變成多種思想的複合表現，成為僅皮毛的表現。

本集的目的，想由住宅來探討美國建築界的現況，因為住宅是最適合表現建築思想的題材。我們不被「近代主義」或「後近代主義」等的流行趨向或偏見所左右，而為本集編輯個人住宅。我們認為：現在已經到了應該對於建築界極少數的人們個別創造的近代建築思想之真正價值，作再檢討的時候了。

我們為了使讀者，透過住宅有見到近代建築的機會，因此選擇的都是將多方面的觀點作最直接表現的住宅。例如：入口空間、行動空間、進餐空間、休息空間、建築表現等題材。這些重點都是建築家用於表現它的構想之處。

我們嚐試，由本集所參加的建築家，提出今日所不可忽視的建築問題。我們認為；他們對於住宅中之部份空間所嚐試過的解決方法，也就是整個設計過程的開始。

本集所選的住宅都位於郊區，因為我們認為郊區住宅最能表現出建築家們的理想。我們也儘可能選擇不同背景的建築家，因為，他們的背景會影響到對於住宅設計在精神方面和物理方面不同的表現。希望讀者靠着自己的判斷，來分析這些住宅。我們這些建築傳播人員的義務，也就是希望讀者能找出建築家們不同的解決問題之方法。

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PRIVATE HOUSE

Albuquerque, New Mexico, 1977

Architect: Antoine Predock

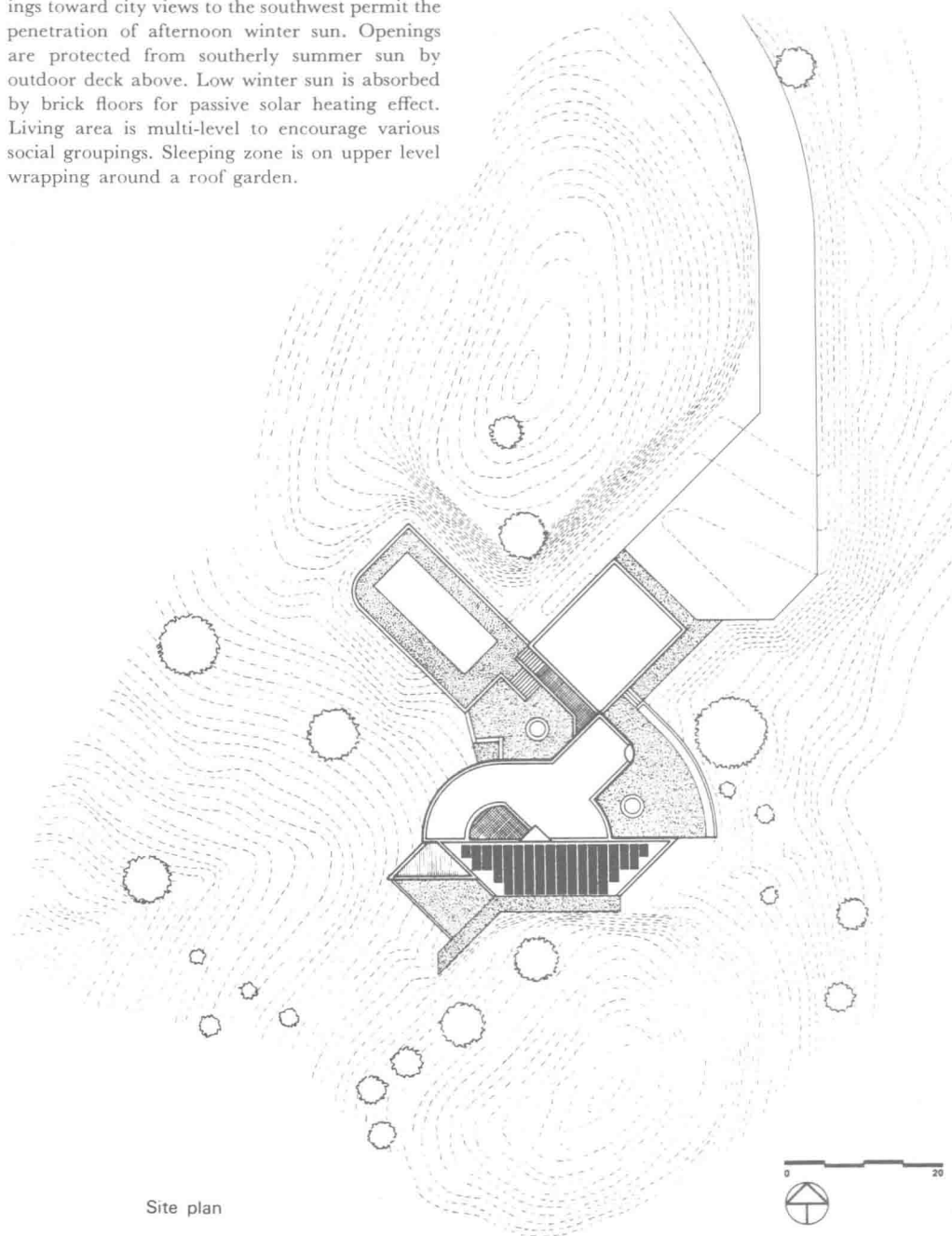
這棟住家的設計主旨在於配合景觀與自然通風以及氣候條件，而在山麓的小丘上建造利用太陽能的住宅。在這住家裡，我們將對於屋內與屋外生活方式的重視，透過設計加以具體化。建築物配置於兩個小山丘之間的鞍部上，經過入口平台，沿着一條未加鋪裝的道路即可到達建築物。在入口平台，因為正好被建築物遮斷，因而無法見到西邊的遠景；可是，一進入建築物內部，就能觀賞到此一美景。建築物沿着鄰近地區的傾斜而配置，因此內部的活動區域內，也依地形來設計出露台和天井。自然通風是靠着沿斜坡的階梯狀配置形態，以及具有煙囪效果之較高位置的移動窗來予以調節。

在起居室部份呈輻射形配置的鰭狀壁，可以緩和從低角度射入夕陽，也可以眺望鎮上的夜景和遠山的風景。另外，可以望見西南方向鎮上風景的大開口部份，可以獲得冬季下午的大量陽光。這些大開口部份，靠着樓上外面陽台的遮蔽，可以防止從南方照射進來的夏季陽光。冬天較低的太陽熱能，為提高固有式（被動式）太陽能暖氣效果，而由紅磚地板所吸收。起居室的地板分成幾段高差，可使團體活動顯出更大的效果。寢室部份在二樓，並以圍繞屋頂花園的形態作其配置。

固有式太陽能系統是由使用脫脂甘油液體的金屬片集熱器所構成的，從蓄熱水槽傳來的熱量會和空間暖氣圈交換，將它送入輸送強制空氣的渦輪扇線圈系統中。集熱器配置於建築物全體的幾何形態中，集熱器和建築物本身之間成為有傾斜天花板的入口部份。

vealed immediately upon entering. The house steps down a hillside with terraces and patios entrapping activity areas. Natural ventilation is induced by the stepping cross section and the high operable windows which create a chimney effect. Radial masonry fin walls off the living area buffer low west sun angles but permit views toward city lights at night and distant mountains. Large openings toward city views to the southwest permit the penetration of afternoon winter sun. Openings are protected from southerly summer sun by outdoor deck above. Low winter sun is absorbed by brick floors for passive solar heating effect. Living area is multi-level to encourage various social groupings. Sleeping zone is on upper level wrapping around a roof garden.

The active solar system is a flat plate collector, ethylene glycol to water exchange. Heat from water in storage is exchanged to a space heating loop which passes through fan coil units for forced warm air delivery. The solar collectors are integrated into the overall geometry of the house, the space between them becoming a sloping ceiling entry.



Site plan

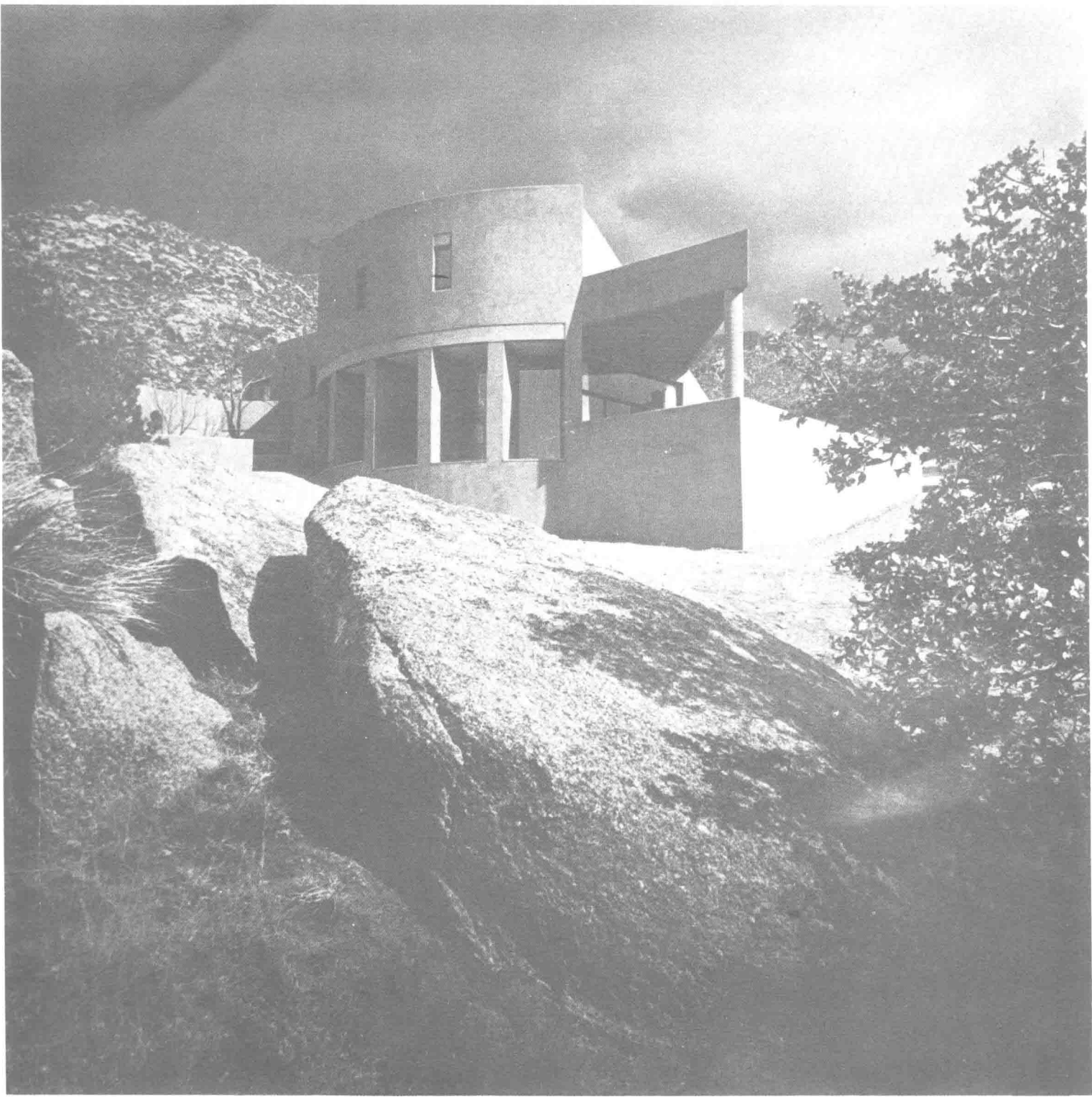
The task was to design a solar heated home in the mountain foothills that responds to views, natural ventilation, and climatic impacts. Indoor/outdoor living patterns are developed in the design of the house.

The house is sited in a saddle of land between two hillocks. The approach to the house is via a meandering dirt road that leads to an entry court. From the court distant views toward the west are intentionally blocked by the house, but are re-



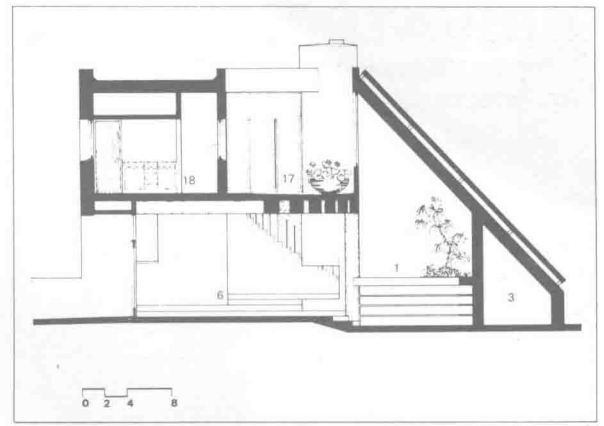
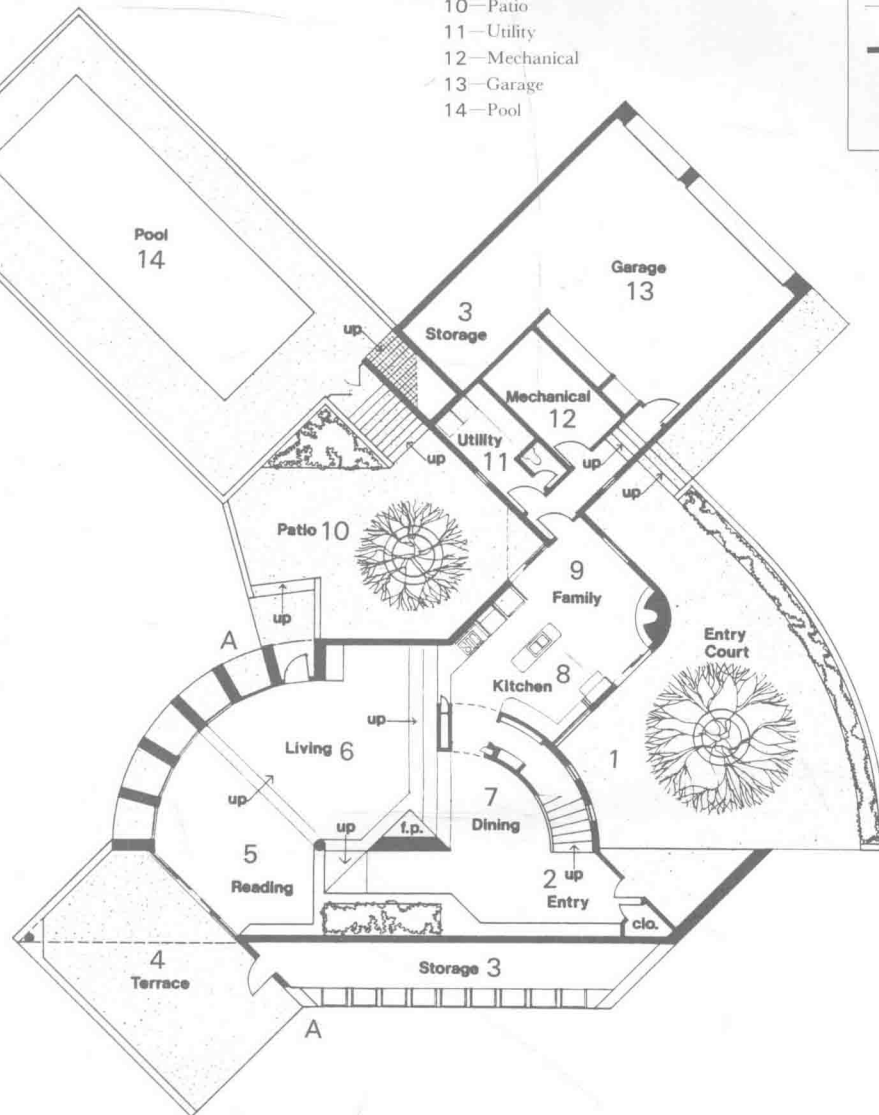
Photos: Joshua Freiwald





1st floor plan

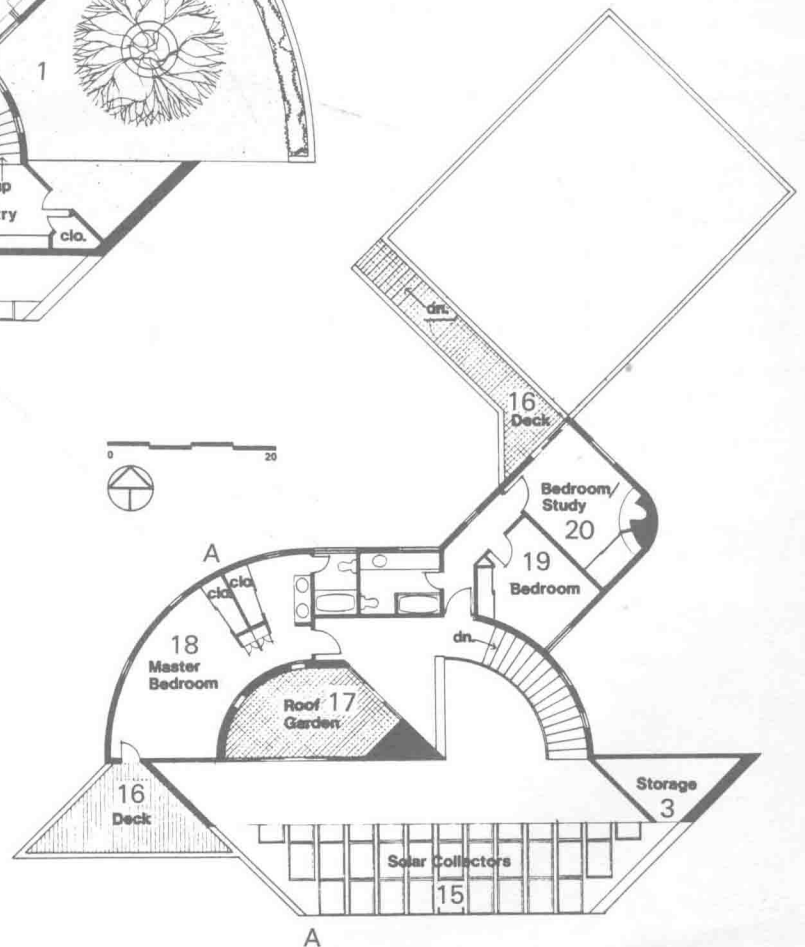
- 1—Entry court
- 2—Entry
- 3—Storage
- 4—Terrace
- 5—Reading
- 6—Living room
- 7—Dining room
- 8—Kitchen
- 9—Family room
- 10—Patio
- 11—Utility
- 12—Mechanical
- 13—Garage
- 14—Pool



Section A—A

2nd floor plan

- 15—Solar collectors
- 16—Deck
- 17—Roof garden
- 18—Master bedroom
- 19—Bedroom
- 20—Bedroom/Study



PRIVATE HOUSE

Weston, Massachusetts, 1975

Architects: Gelardin/Bruner/Cott

設計這棟五人家族用的住宅最大的課題是，建築費用必須控制在每一平方呎為 40 美元。包括大量生產的屋頂材料在內，因選用有存貨而隨時可以購入的材料，其總工程費每 1 平方呎僅為 33 美元，尚且包括獨特的空間處理在內。由於建築物的主要空間都是利用固有式太陽能系統，因此能源成本可控制至最低，靠着起居室的隔熱處理半透明屋頂與暗色石板地板，得以集中、蓄存太陽熱能。並靠着強制暖氣系統的作用，配送於建築物之內。一年中能源消耗費用約等於一般小規模住宅消耗額之二分之一。

每天都要在工廠工作多時的丈夫，對於大量生產的材料，也就是一般住宅不大使用的材料，還抱着相當好感的態度；主婦對此種材料也並不反對，可是卻希望要有溫暖而且適當規模之住宅。

設計時最感興趣之點是：能夠保持私密性，而且要有寬敞而開放的內部空間之業主要求。並且，業主雖然很少以宴會來待客，可是為未雨綢繆，希望能夠有客用空間。關於廚房，他們的要求是在待客中不會令客人有被隔絕感，卻又能保有私人性的開放式廚房。家庭中的每一個人都希望能有私人的讀書、寫作或繪畫的房間。對於這些要求事項在設計上的解決方法是，除了起居室以外，所有其他房

間皆採取 L 型木構架。起居室屋頂是由附有照明器具的鋁樑和鋁柱所支撐的，一系列半透明隔熱處理玻璃纖維板所構成。在起居室內，由雙拉隔熱玻璃門構成的兩邊牆壁，其高度延伸到屋頂，作整層高度的配置，而另外兩面均未設置牆壁，以表示起居室、餐廳、廚房、入口、客房、樓梯等空間的連繫。

我們將起居室的地板降低，因而保持了起居室和廚房之間的私密性。除了和起居室連在一起的鋪設地毯之三級梯階外，一樓的地板全部鋪貼 12 × 12 吋的石板，以收統一效果。二樓的私密性，我們將它分成兩部份而得以保持，一部份是孩子房間，另一部份是主臥室及畫室。

建地是由東邊進出，容易被人看到的建築物之一邊，為了使設計時最重視的起居室內部不太耀眼，而有意的加以簡單的處理。

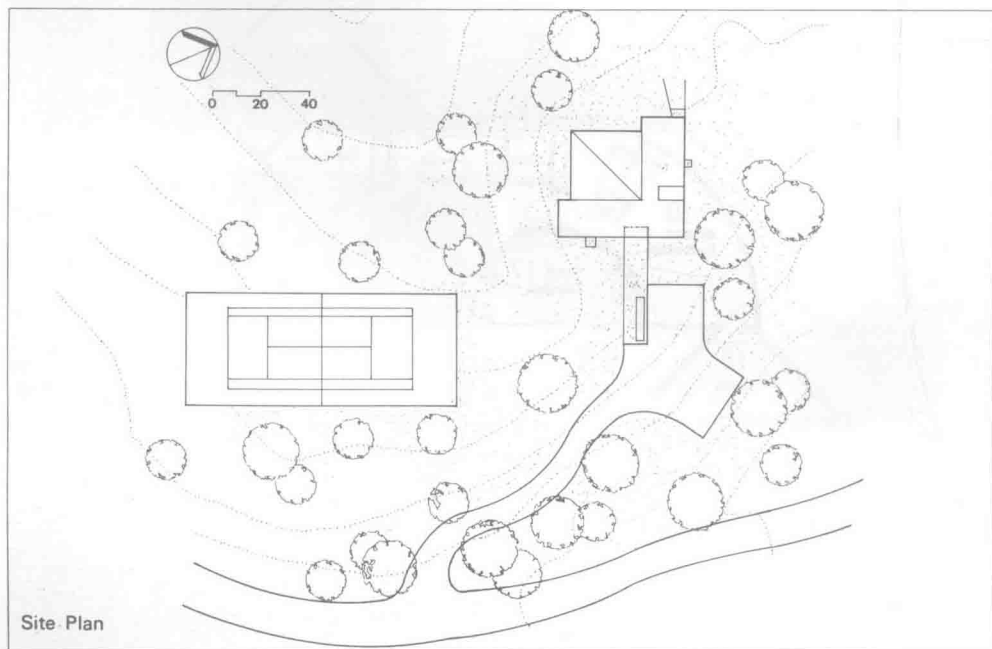
The major challenge involved in the budgeting of this custom residence for a family of five within the cost constraints of \$40/s.f. Using a select group of off-the-shelf products, including an industrial roofing material, unique spatial solutions were achieved within an overall construction cost of \$33/s.f.. Energy costs are kept at a minimum due to the inherent passive solar design of the major spaces of the house. The insulated translucent living room roof and dark slate floor help generate and store heat which is further distributed throughout the house by the forced air heating system. The year-round energy related costs are one-half of what they were for the owner's previous, smaller, conventional house.

The husband, who spends most of his time in a factory, felt very much at ease with industrial or non-residential materials. The wife, although not uncomfortable with these materials, wanted residential warmth and scale.

The most challenging aspect of all was the clients' desire for expansive open interior space, coupled with the need for privacy. They can't entertain often, but when they do they wanted space for their guests. They wanted a kitchen to be open so they would not be closed off from guests when entertaining, but they also wanted the privacy of a dining room. Each family member expressed the need for privacy in order to study, write or paint. The design solution was a wood frame L-shape that encloses all the functions of the house except the living room. Its roof consists of a series of translucent insulated fiberglass sandwich panels carried on aluminum box beams and columns with integral lighting. Beneath the roof are two walls of sliding insulated glass doors while the other two walls have been dissolved to provide a free flow of space between the living room, dining room, kitchen, entry, den, guest area and stairway to the second floor.

Lowering the grade of the living room floor achieved the proper amount of privacy between the living room and kitchen functions. Except for carpeted amphitheatre steps leading to the living room, the entire first floor is unified by the use of 12 × 12 butt joined slate flooring. Privacy at the second floor level is achieved by its division into two wings, one for the children's bedrooms: the other for the master suite and studio spaces.

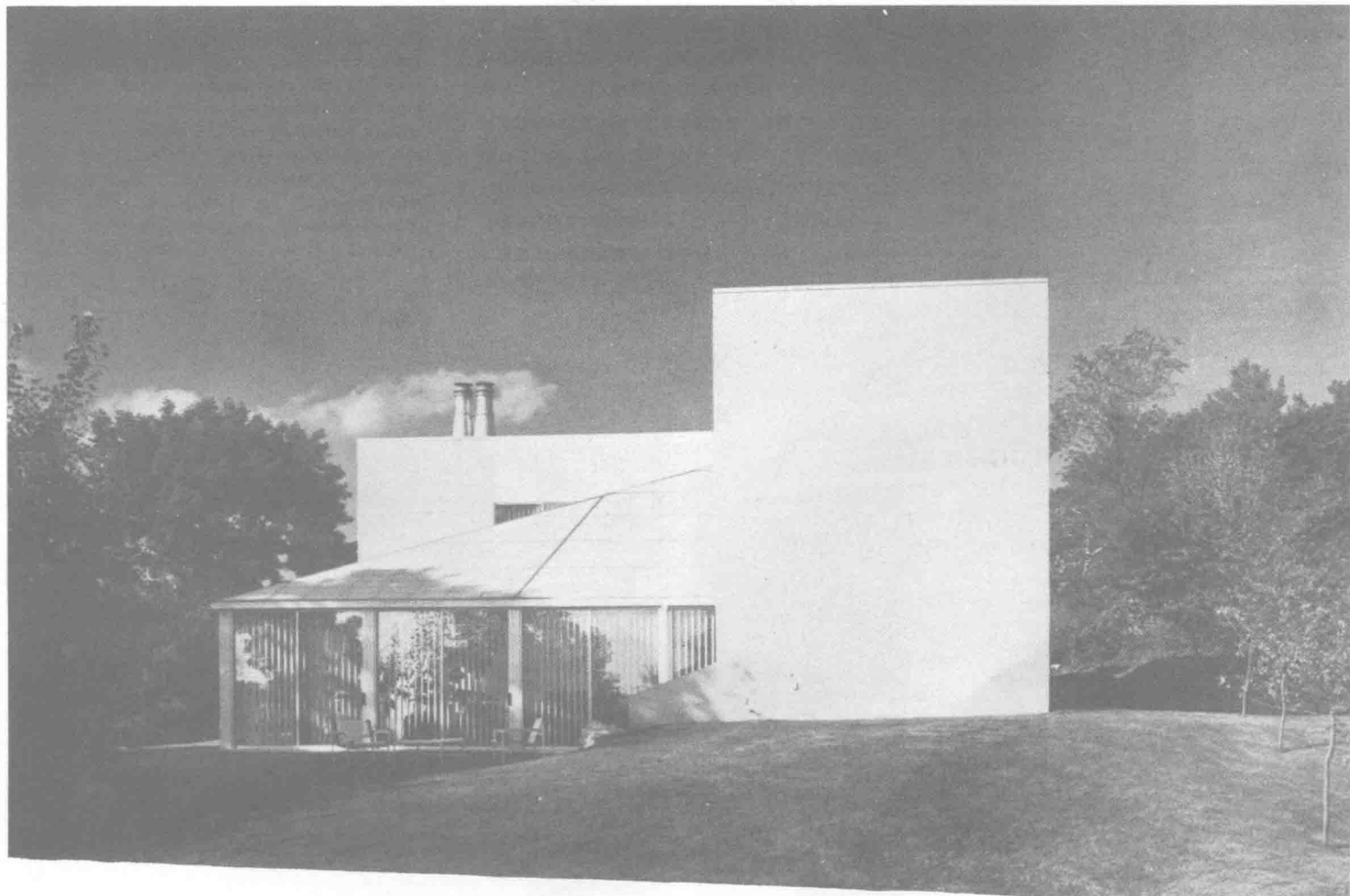
The site is approached from the east. The public side of the house is deliberately understated, concealing from view the interior living space that climaxes the design.

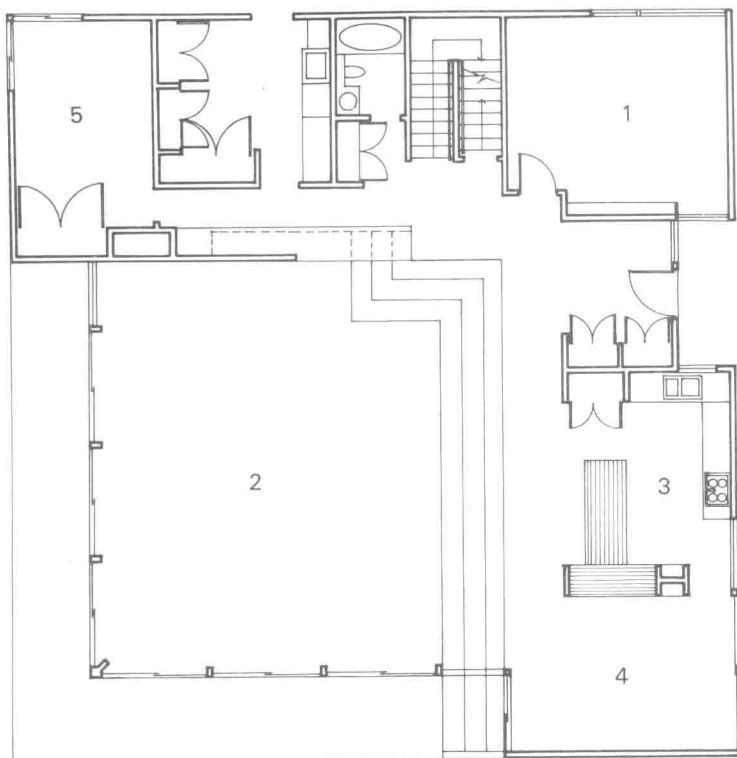


Site Plan



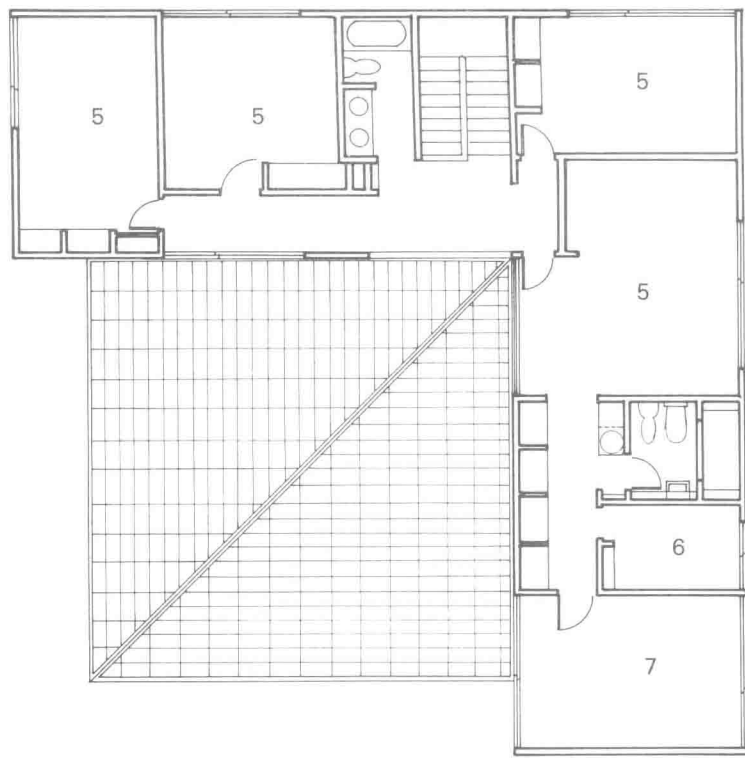
Photos: Greg Heins



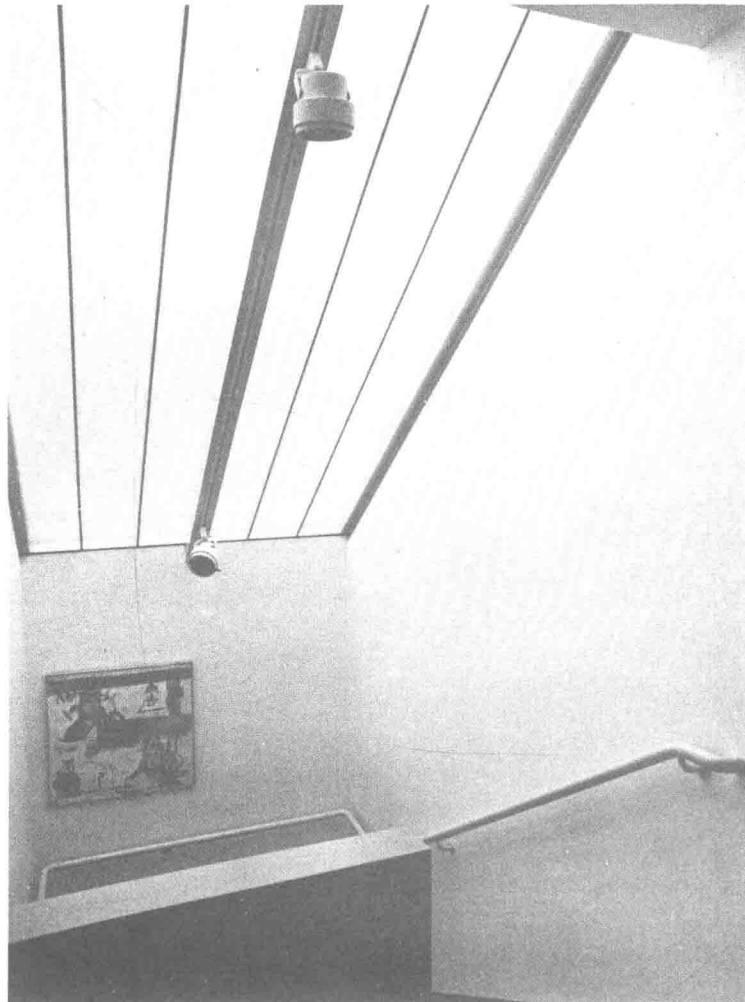


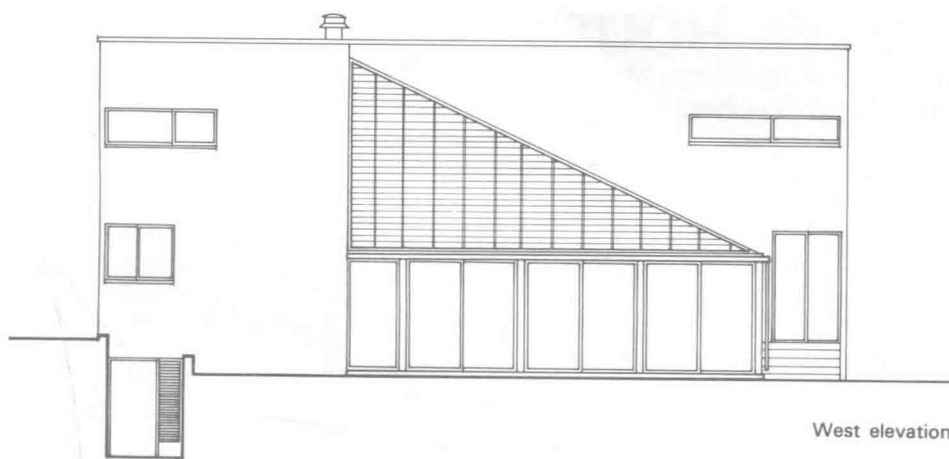
0 1 2.5 5 10

1st floor plan
1—Play room
2—Living room
3—Kitchen
4—Dinig room
5—Bedroom



2nd floor plan
6—Study
7—Stadio





West elevation

