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The motivation for the research activity this report represents is primarily derived from the clear need for quality intuitive understanding of micro-climate dynamics in all sectors of the solar design community. In pursuit of this I presently concentrate on broad questions of pure science and architectural design opportunities. I am particularly interested in questions because the multiplicity of solar and conservation 'answers' seems to be doing some harm to the development of honest quality, and because I feel that there are not enough good hypotheses.

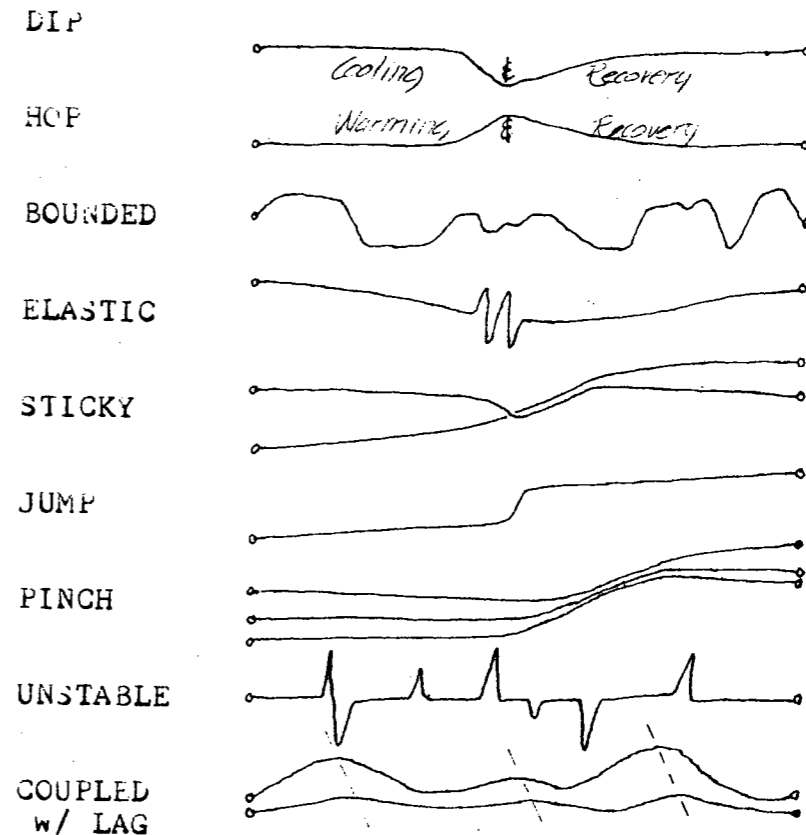
In regard to the following charts, I intend my format to be complete enough for appreciation with patient study. This report is in no way intended as a text and I have no interest in comparative rating of the study houses. I have found significant puzzlement and discovery in each house. This report is of a summer series and is to be combined with a winter series on most of the same houses. I would very much appreciate any reader comment or reaction and, of course, since my work has been personally funded to date, I would appreciate any letters of recommendation to assist me in grantsmanship.

NOTES:

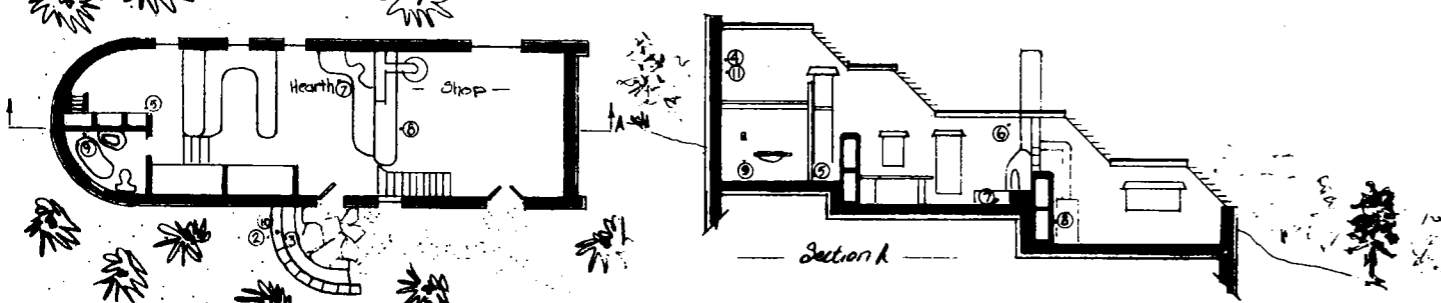
- Equipment: Esterline-Angus 24 pt. recorder for T type thermocouples, 1500 ft. extension wire, and exponential reading hot wire anemometers.
- Accuracy: $\pm \frac{1}{2}$ F and $\pm .1$ min in the recorder and ± 1 F and ± 3 min in tracing. There are probably occasional logic errors in tracing
- The wiggles are not statistical; they are events.
- Some apparent correlation is probably coincidence.

There are two ways to read these drawings. First pick and identify one line at a time and follow it closely through the whole time period. The second is to look at the drawing with relaxed eye attention, allowing your eye to grasp one or more specific lines in total. This can also be done with tracings.

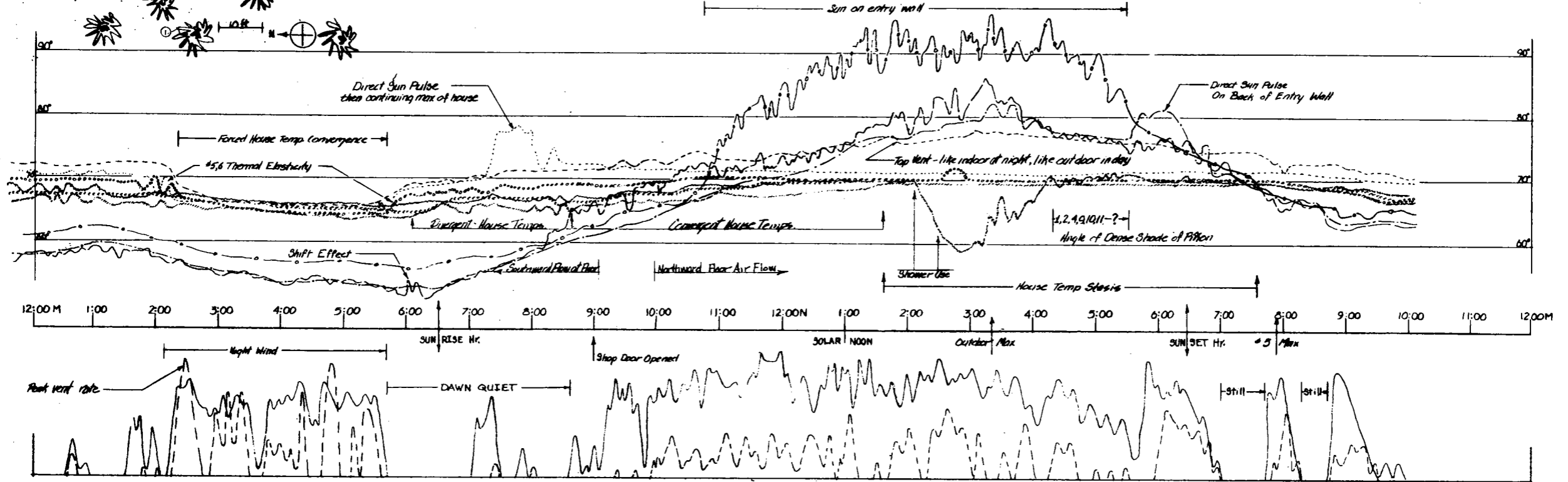
CURVES TO LOOK FOR AND PONDER



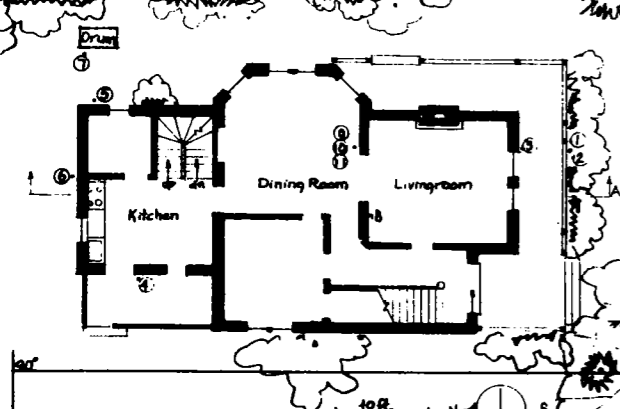
August 1977 Sante Fe, New Mexico - Adobe, Direct Gain Solar House, Sunny Day



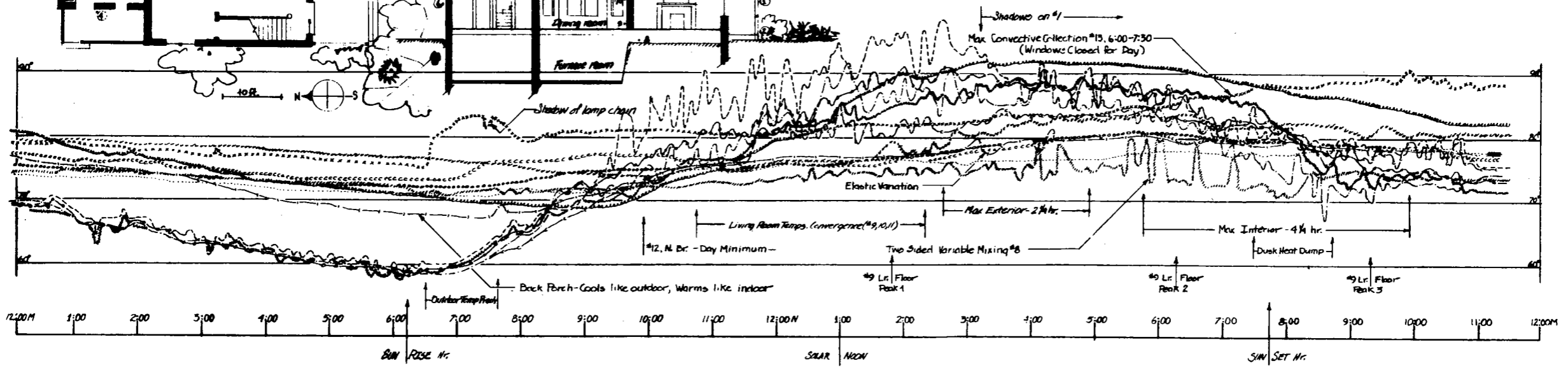
- 1 ——— Outside Temp. — behind tree
- 2 ——— " " — behind entry wall
- 3 ——— " " — face of entry wall
- 4 - - - - - Inside Temp — top vent
- 5 ······· " " — below loft
- 6 ······· " " — above hearth
- 7 ······· " " — below hearth
- 8 ······· " " — north wall of shop
- 9 ······· " " — bathroom over tub
- 10 ——— Outside Wind — Top of entry wall
- 11 ——— Inside " — Top vent



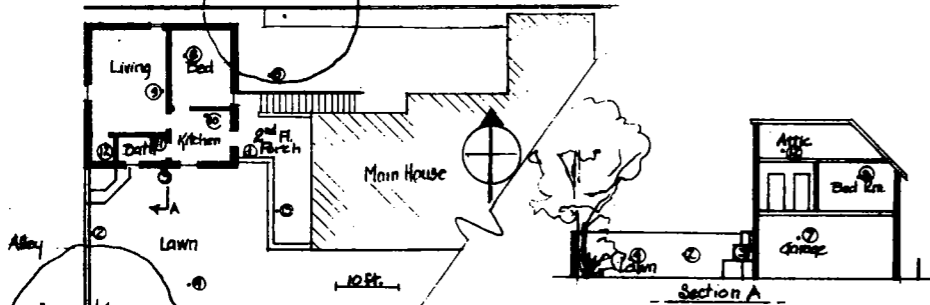
August 1977 - Denver Colorado - South Facing Brick Victorian House - Sunny Day -



- 1 - - - - - Outdoor Temp. - Front of Porch in Sun
- 2 - - - - - " " " - Under Front Bushes
- 3 - - - - - " " " - Front Wall in Shade of Porch
- 4 - - - - - " " " - Back Porch by Kitchen Door
- 5 - - - - - " " " - Rear of E. Wall w/ Foam Cover Insul.
- 6 - - - - - " " " - 3" off N. Wall
- 7 - - - - - " " " - On W Side of Drum w/ Foam Cover Insul.
- 8 - - - - - Inside Temp - Sub-floor of Lr.
- 9 - - - - - " " " - On Dining Rim Floor
- 10 - - - - - " " " - @ 5' Above #9
- 11 - - - - - " " " - @ 9' Above #9 (10'-6" Ceiling)
- 12 - - - - - " " " - North Bedroom
- 13 - - - - - " " " - East Bedroom

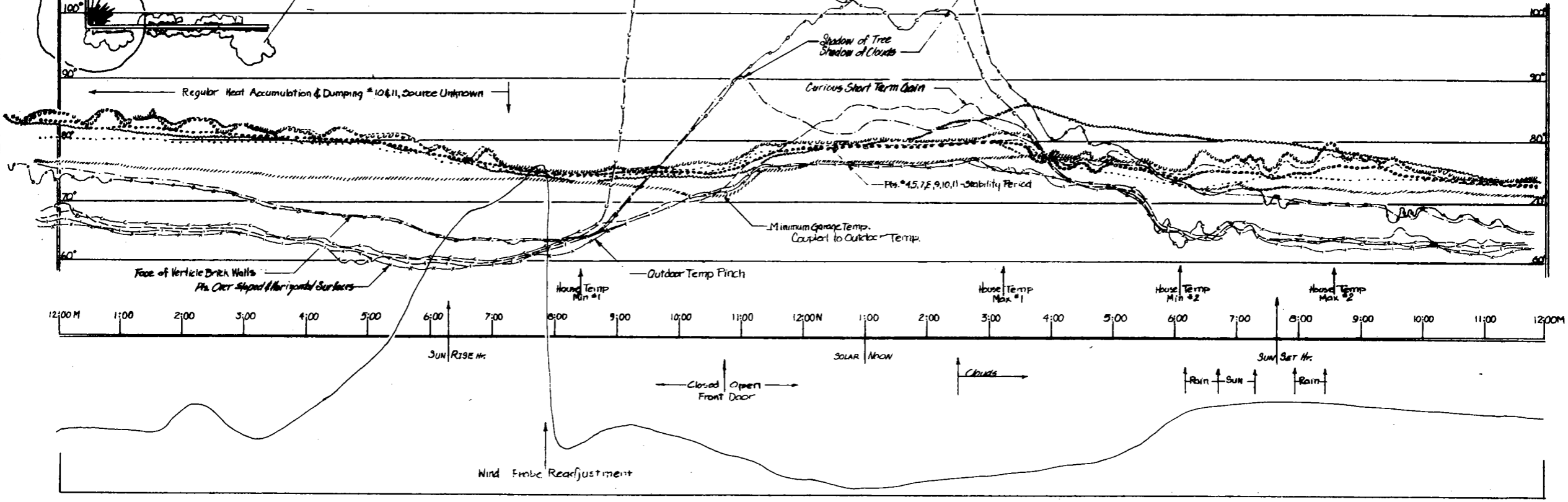


August 1977 - Denver, Colorado - Two Story Brick Carriage House - P.M. Clouds, 6:30 Shower

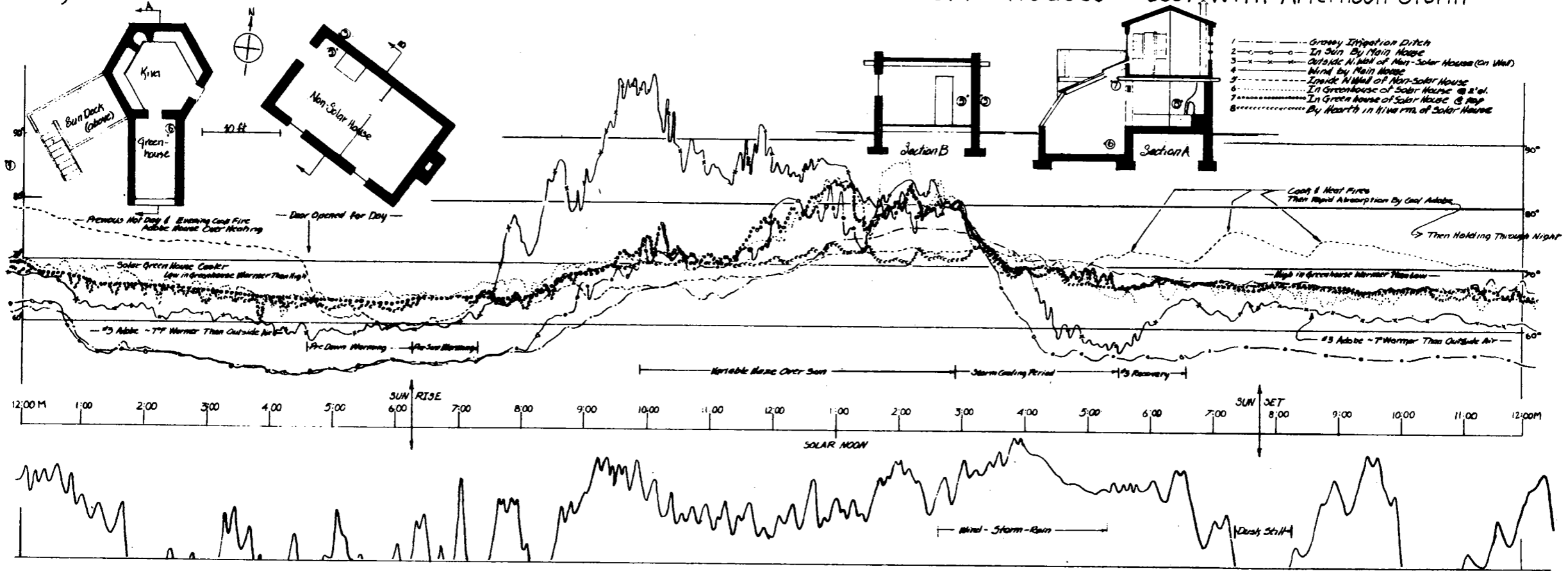


150°F
 $\Delta T = 60^\circ$
 Sun ESE @ 50° Elevation

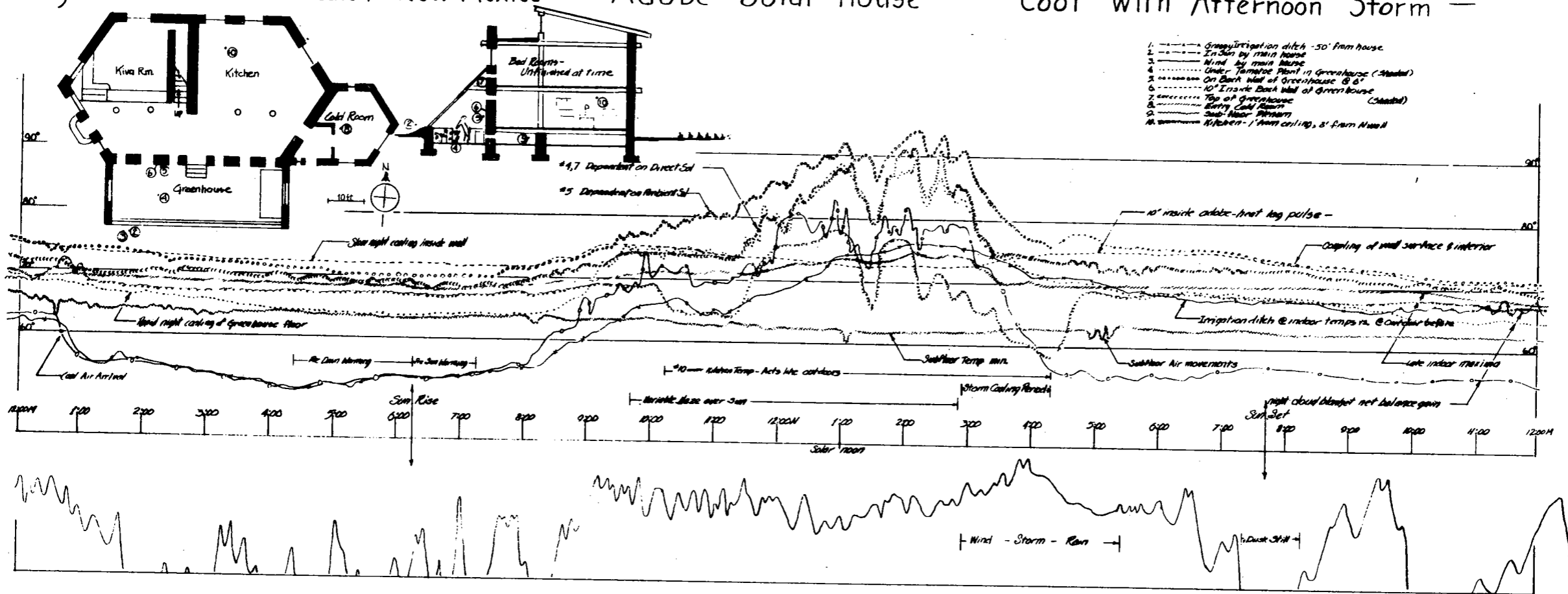
- 1 --- Outdoor Temp. - On 2nd fl. Entry Deck - Shaded
- 2 --- " " - E. Side of W. Garden Wall @ 4' el.
- 3 --- " " - S. Side of S. Wall of House @ 5' el.
- 4 --- " " - On 3' Pole in Lawn
- 5 --- " " - Sheltered Driveway E. of House
- 6 --- " " - E. Facing Roof Slope
- 7 / / / / / Indoor Temp - In Garage
- 8 " " - Bedroom
- 9 " " - Livingroom
- 10 u u u u u " " - Kitchen
- 11 " " - Bathroom
- 12 / / / / / " " - Attic 1' Above Ceiling
- 13 --- Average Wind on Porch



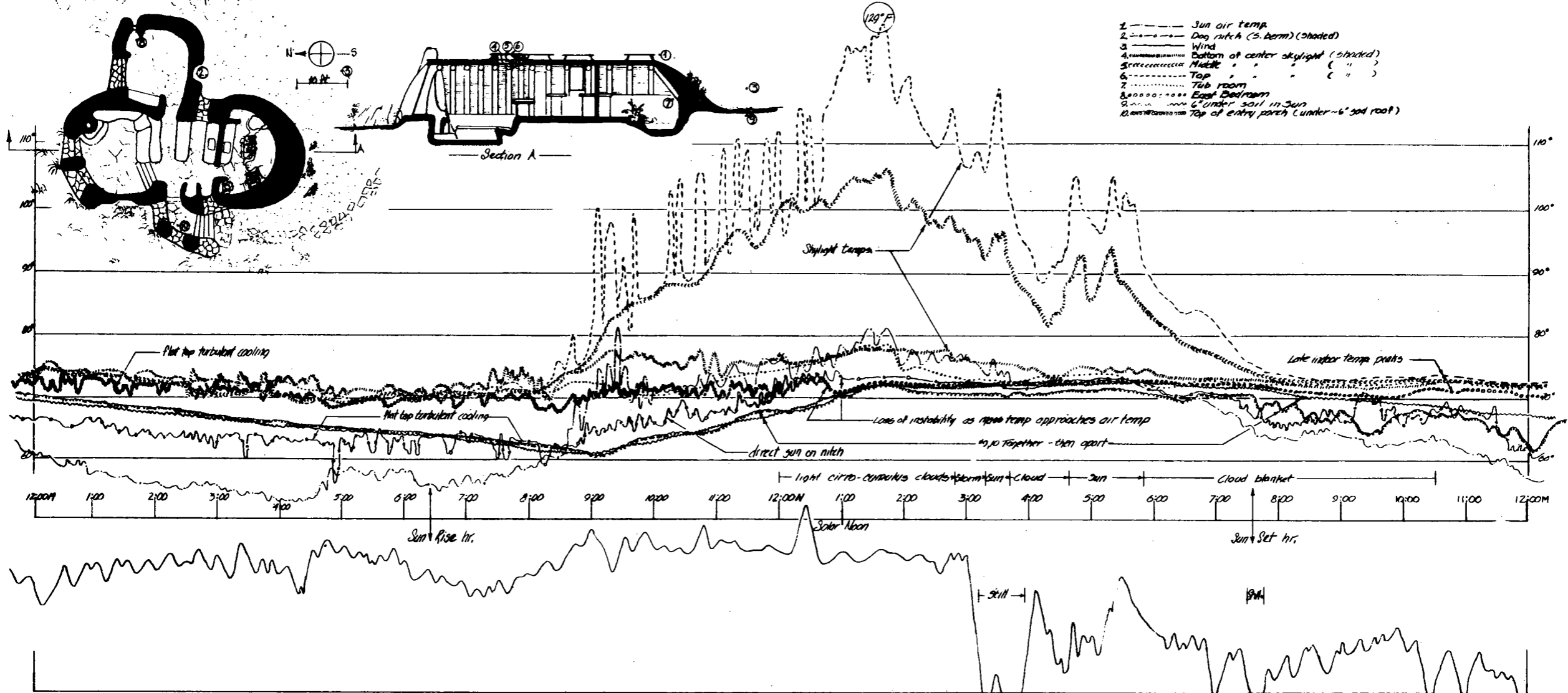
August 1977 - San Luis, New Mexico - Adobe Solar and Non-Solar Houses - Cool with Afternoon Storm



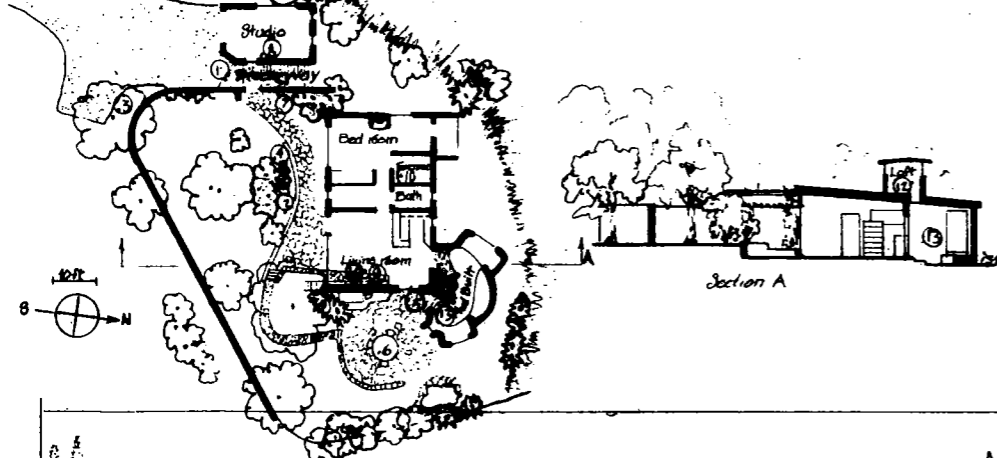
August 1977 - San Luis, New Mexico - Adobe Solar House - Cool with Afternoon Storm -



August 1977 - Sante Fe, New Mexico - Adobe Berm House - Partly Cloudy Afternoon



August 31 1977 - Sante Fe, New Mexico - Courtyard Adobe Bungalow - Sunny Day



- 1 ——— Wind - Over Breezeway
- 2 ——— " - On 3' Pole in lawn
- 3 - - - Outside Temp. - Behind Apple Tree in Drive
- 4 - x - x - " " - Shrub In Lawn By Entry Path
- 5 - o - o - " " - Over Patio Door
- 6 - - - - " " - Under Spool Table In Patio
- 7 ~~~~~ " " - Middle Breezeway
- 8 ~~~~~ Inside Temp. - In Studio (garage) by E. Window
- 9 ~~~~~ " " - Over Hearth
- 10 ~~~~~ " " - Base of Hearth
- 11 ~~~~~ " " - Furnace Room
- 12 ~~~~~ " " - Loft Room
- 13 ~~~~~ " " - Mud Built Room (N)

