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.H7417

THE DEVELOPMENT TRACT HOUSE:
THE TRAILER, THE NATURAL HOUSE

Undergraduate Thesis

By

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Submitted to the School of Architecture as
partial fulfillment of the requirements for
the Degree of Bachelor of Architecture

at

Montana State University

Bozeman, Montana

1972

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THESIS PROJECT

Today the common person suffers under a heirarchy of professional expertise which ignores him in lieu of capitolism. The part of his life most affected by this neglect is at home--his living environment.

My thesis shall propose alternatives to some of the areas of his living environment which have been badly exploited and lack sensitive response to his needs; alternatives which could be readily put into action, relate directly to the complex whole of the living environment, and exhibit a more common sense approach in many ways including, ~~economics~~, personal and social needs, urbanization, quality, adaptation, and cultural left and rights.

1. THE DEVELOPMENT TRACT

Establish an alternative which provides more chance for individuality, economy, and a solution to the situations the tract tries to escape.

2. THE TRAILER HOUSE

Pin down the factors of trailer house living which have made it so popular and, with them, develop a more adequate system of housing in both the trailer and its "court".

3. THE "NATURAL" HOUSE

Explore the use of natural phenomena to accomplish mechanical tasks of the house such as ventilation, heating, lighting, and cooling--and how they may affect the shape of the house. Also propose materials and methods of construction which represent adaptability, long life, efficiency, construction simplicity, and economic value; then design a natural house to meet my needs.

Each project will last three weeks of the spring quarter with a conclusion at the end of each; and a summary of the total after the nine weeks.

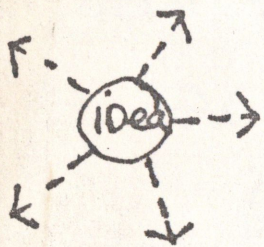
In response to man's only instinct - to organize and make deductions thereon - I have graphically represented my "design approach."

Because process and product are inseparable - and ~~is~~ that a design is only as good as its foundation (concept), I present this material as product, process, approach, design, theory, and analysis all rolled into one - thus fulfilling the nature of my "design approach."

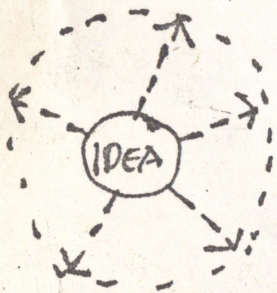
the approach is:



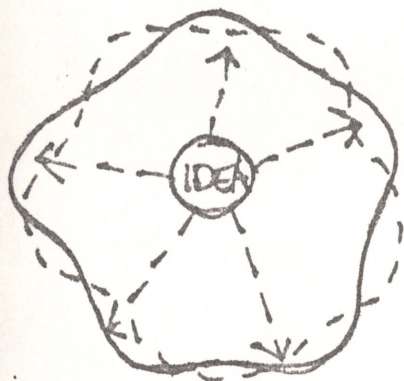
- it begins with an idea.
- the idea is not an intuitive invention - it comes from man's ability to recognize a "disorder". (see portion on "ORDERS of existence") and desire to order it.



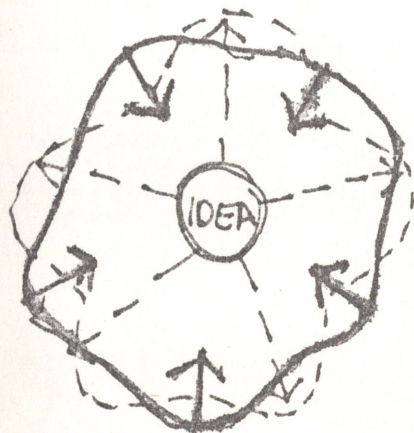
- a thoughtful gathering of scattered parts occurs, ~~some~~ some researched - some already known.



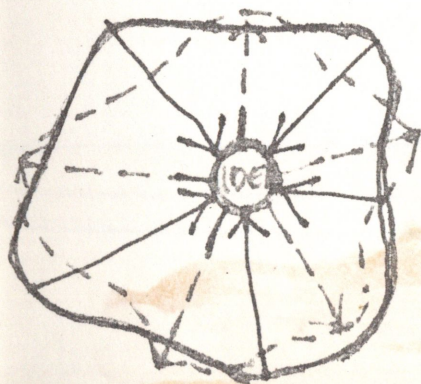
- similarities of context develop - patterns become observable - relations occur.



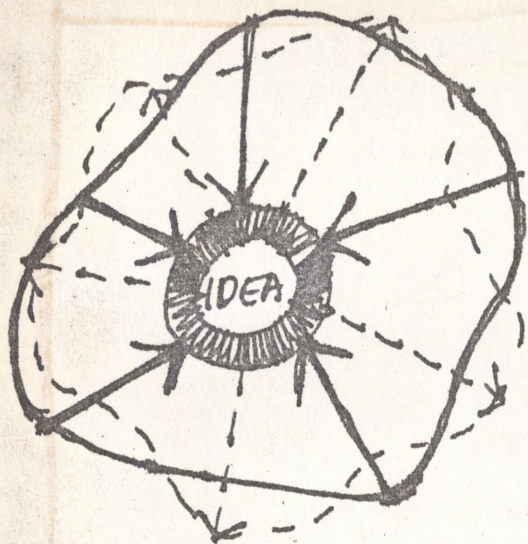
- at this point "concept" can be established
- if ~~developed~~ established sooner it is narrow and incomplete.



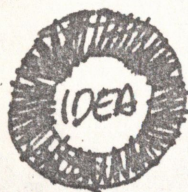
- cultivation of that "concept" with the old scattered parts and newly found patterns.
- new forms of context are generated



- THE process progresses at its own rate and finished only when the process is complete



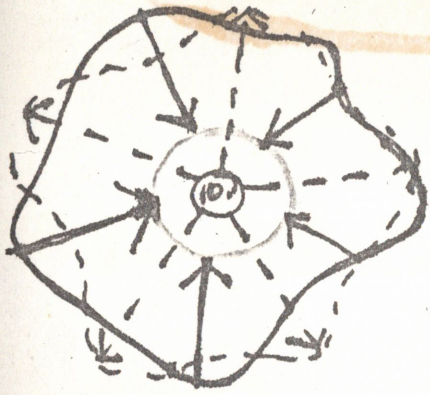
- The product or solution is then complete - an "Uncontestable whole" built on deductive reasoning and understanding.



- ~~the~~ the idea
- the process
- the analysis
- the manifestation

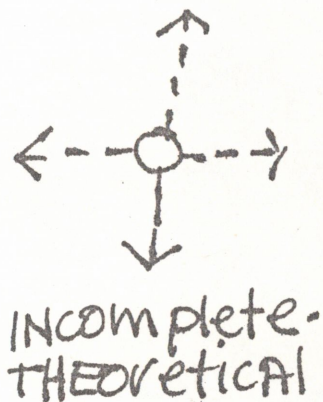
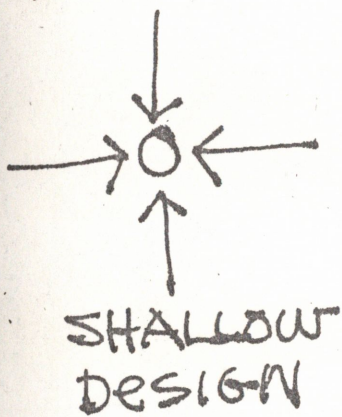
the idea and product are one in the same.

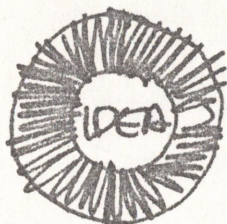
ANALYSIS OF THE METHOD.



- in relation to Architecture - it is possible to go this far before any overall shape is determined.

- if followed completely the "shape" will "suddenly appear"!!! no contrived composition - no intuitive speculation, - and no subjective blindness.

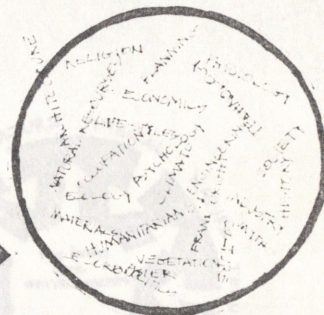




IT IS IN THIS SPIRIT
THAT I PRESENT THIS
MATERIAL - SCATTERED
PARTICULARS - AIMED
TOWARD A POINT,
NAMELY A THESIS FOR
FINALIZATION OF AN
ARCHITECTURAL B.A.
(AS WELL AS AN SELF-ORDAINED B.S.)

(brevity is imperative, consequently
I have tried to stimulate whole
thoughts with one blow - IF you
do not get the connections - please
~~reconsider~~ reconsider later. IT IS A matter of "self-
relationship recall" based
on experience.

LIVING CORE ENVIRONMENTS —→

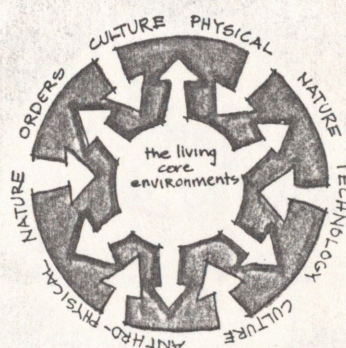


HOLT'S THESIS

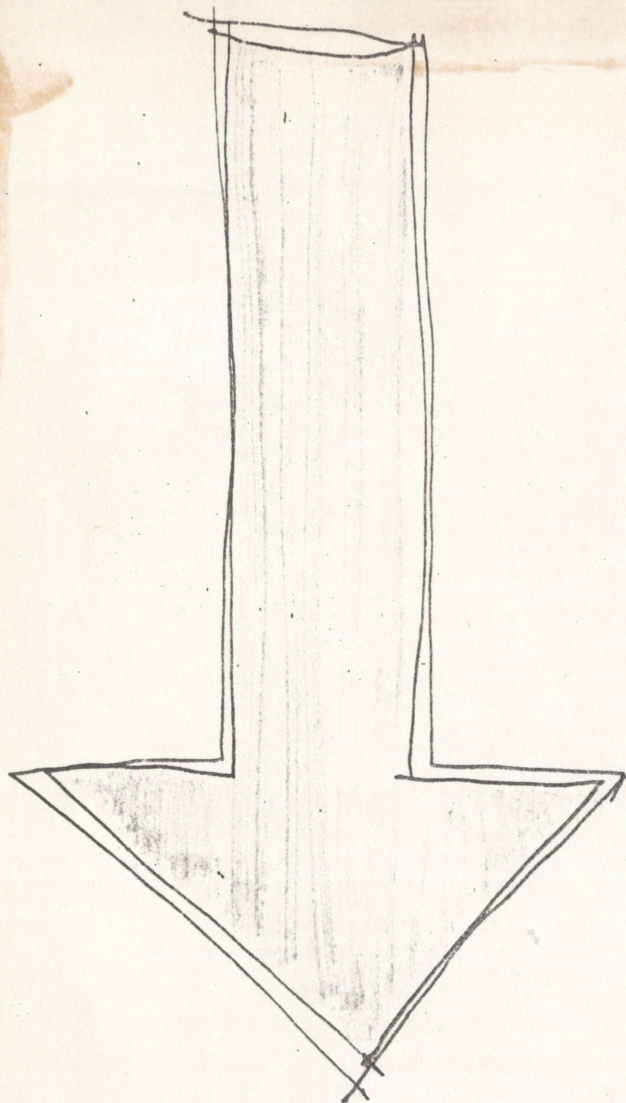
1. A NATURAL HOUSE OR PERSONAL SPACE - VALUING COMMON SENSE MECHANICAL SYSTEMS
2. MOBILE BUILDINGS OR MODULAR CONSTRUCTION AND OWNER PARTICIPATION
3. A HIGH RISE APARTMENT OR CAPABLE COMMUNITY AND DENSITY VARIATION

JURY —→

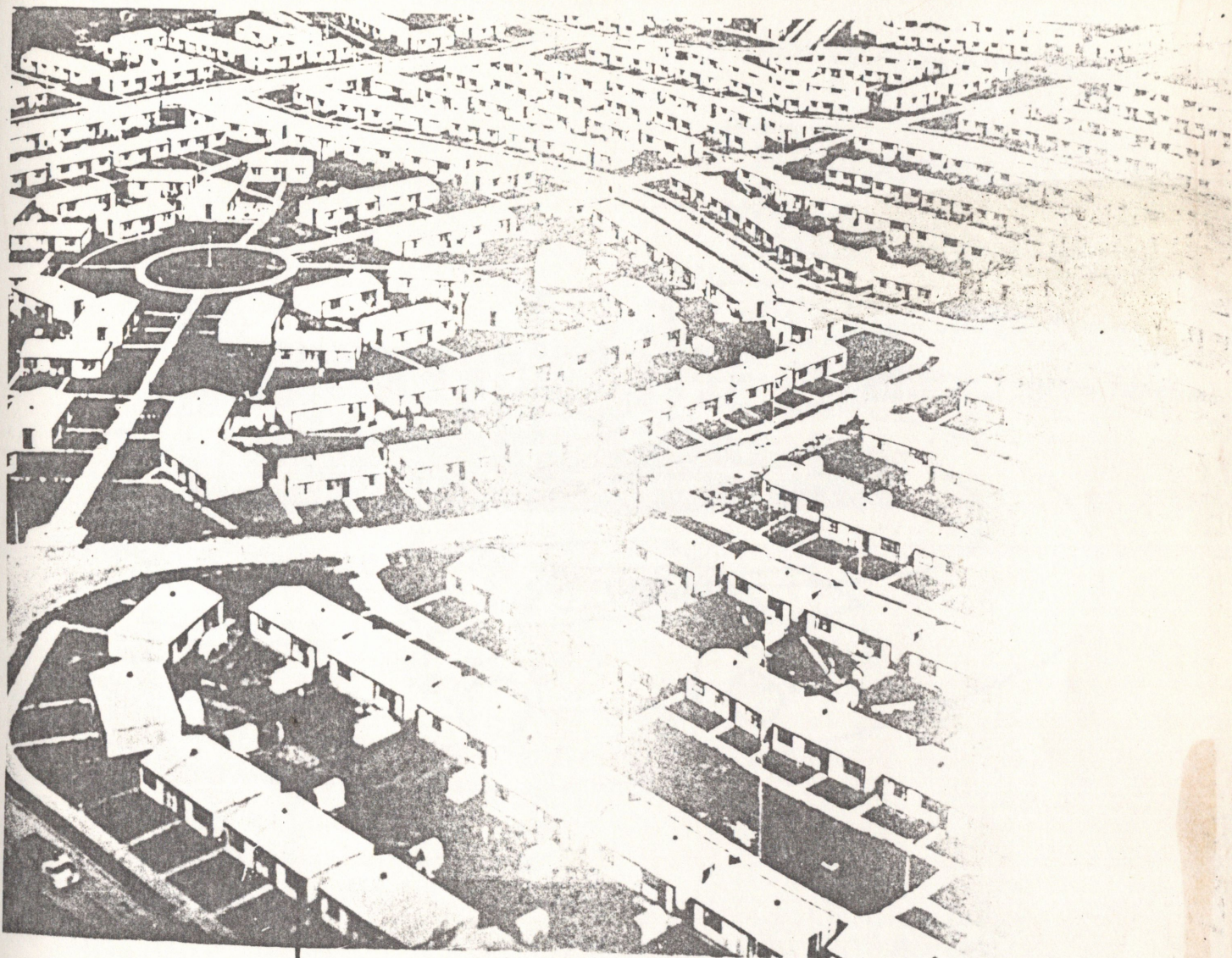
Today the demand for space to live is greater than ever. The resulting supply has fallen short of adequately fulfilling this demand - determining the quality of living core environments. This is a neglected and understudied area due to profit margin goals.



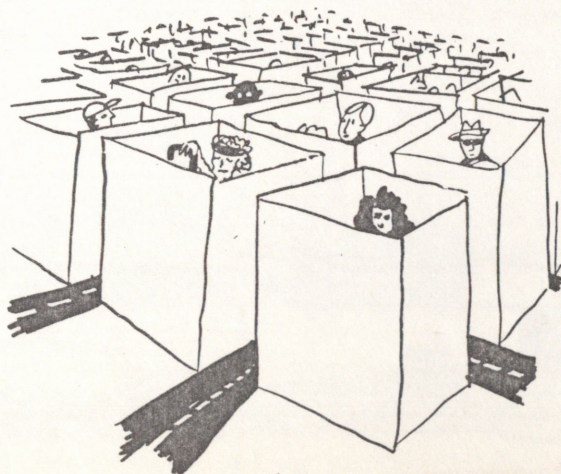
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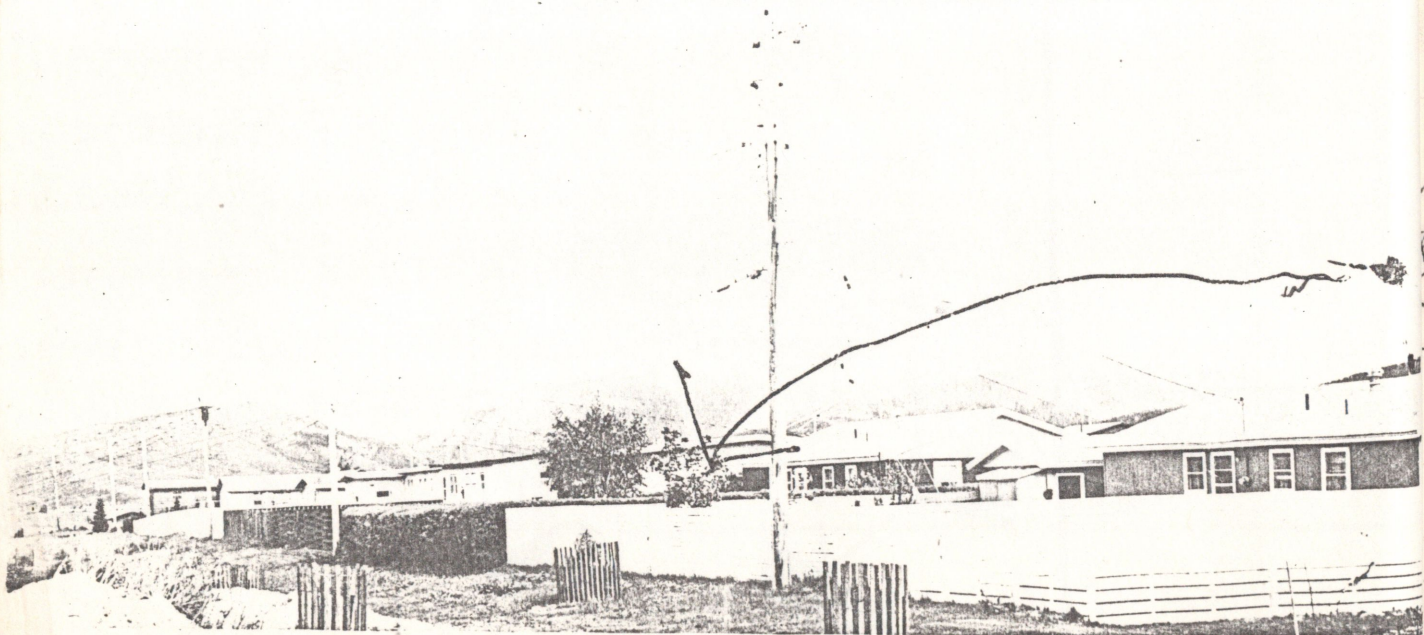
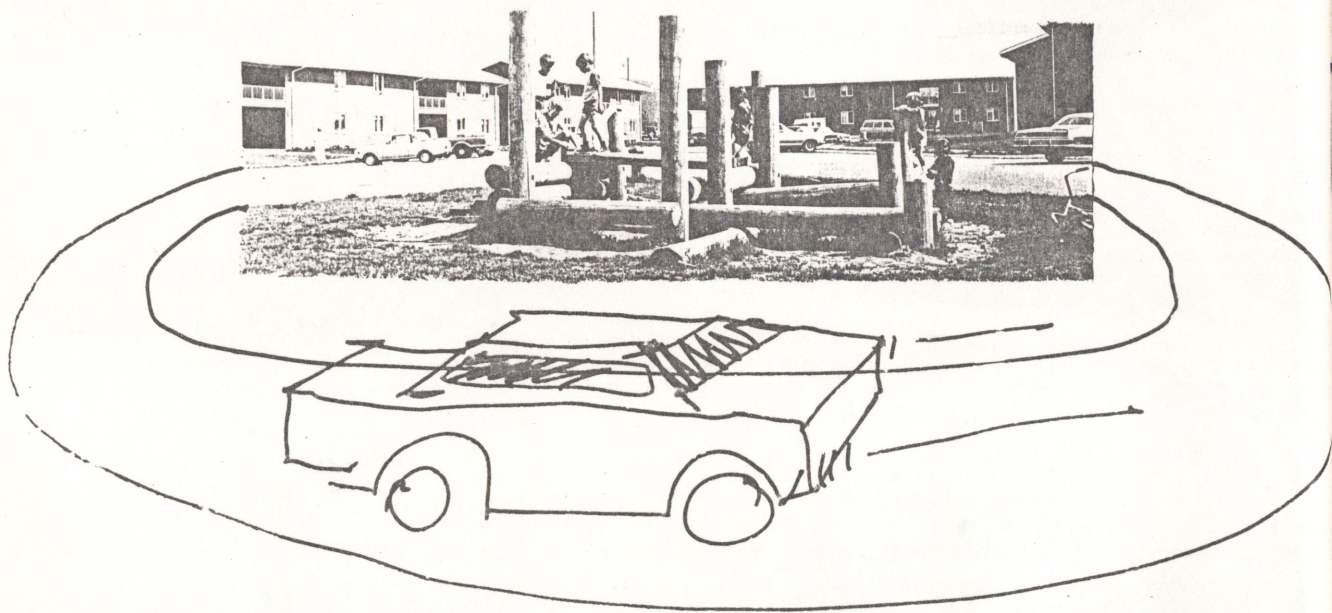


- the unstated objective of this project is to investigate new approaches to helping relieve the housing problems today.
- approaches which exhibit greater sensitivity to the individual & family
- approaches which would hopefully advance present housing technologies, introduce more "home for your money", and educate the public.



WHAT'S THE
SITUATION?





COMPONENTS OF D. TRACT DESIGN.

1. BUFFER

1. DISTANCE (VISUAL)
2. MASS OBJECT (VISUAL)

2. DESIRED ELEMENTS OF PLOT

1. INTERIOR PRIVATE (HOUSE)
2. EXTERIOR PRIVATE (BACKWARD)

3. ACCESS

1. FRONT STREET DIRECT ACCESS
2. STORAGE/STOP, GARAGE.

THESE ARE DIAGRAMMED DESIRES. RE-ORIENT THEM TO A USE FULL PURPOSE.

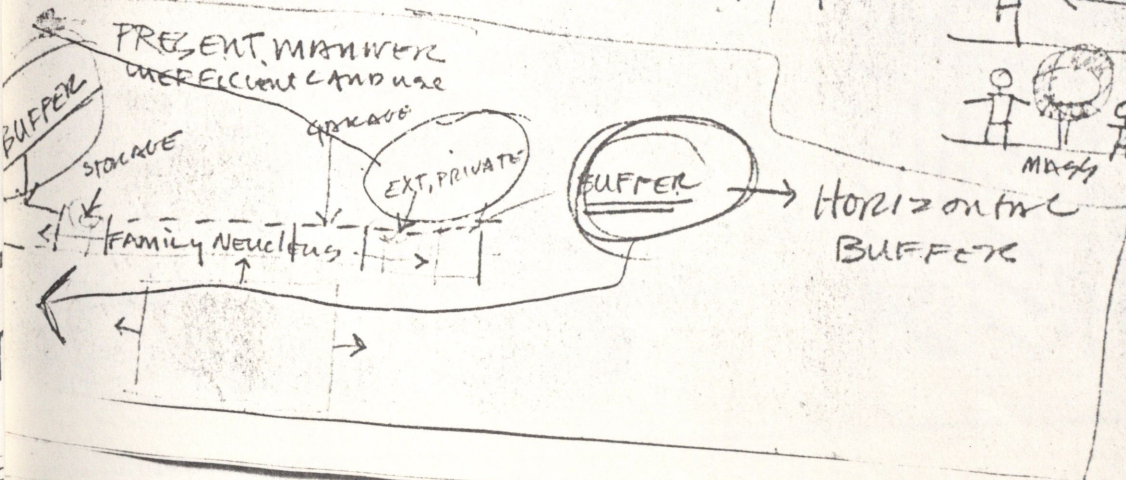
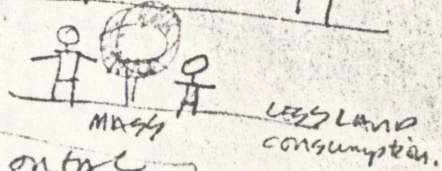
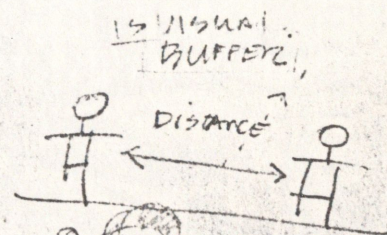
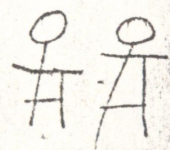
With THE BUFFER FILLS LACK OF ADEQUATE PRIVACY fulfillment in family nucleus, and extends an identity of place. NOTE: IF individual has more involvement to fit in then identity is found in more productive manner.

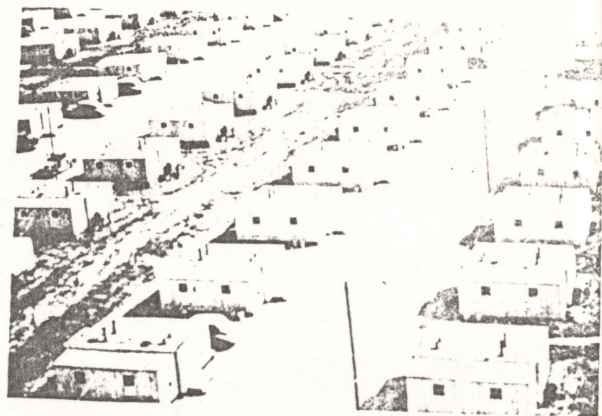
DISTANCE BUFFER

LENGTH DETERMINED BY DEGREE OF ^{VISUAL} DISTRACTIONS BETWEEN TWO OBJECTS. DE-EMPHASIS of OBJECT TO BE OBTAINED.

MASS BUFFER

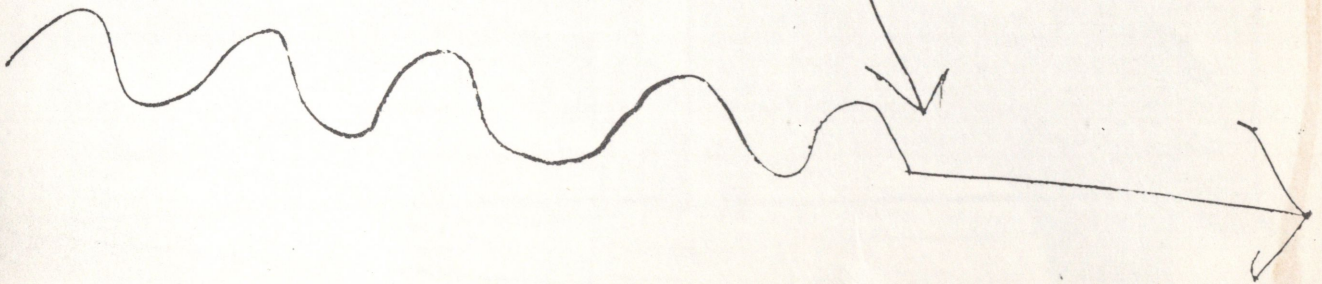
VISUAL STOPPING BETWEEN TWO OBJECTS







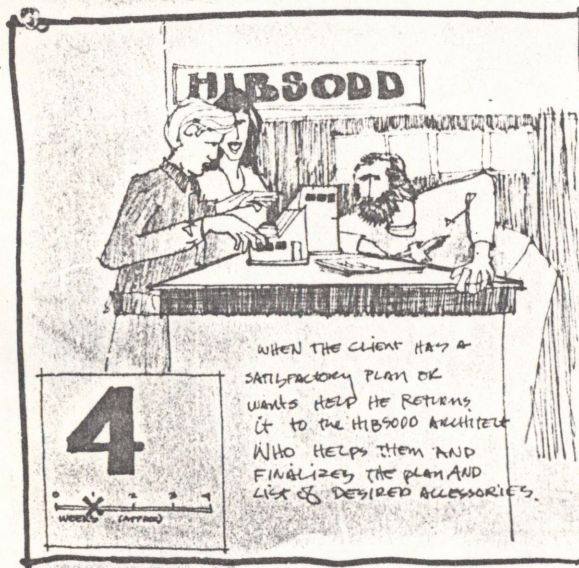
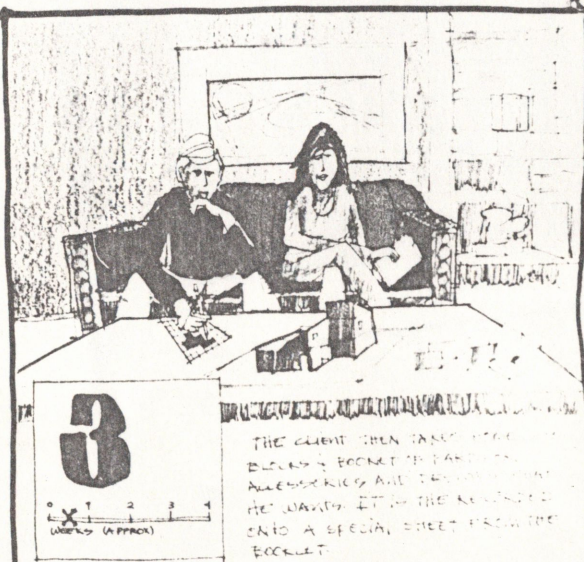
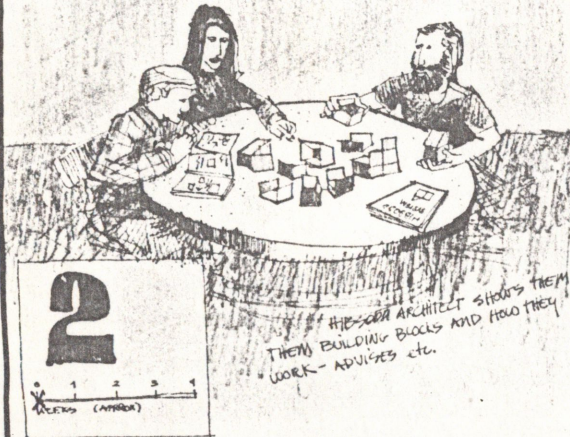
↑
DESIRE FOR INDIVIDUAL
EXPRESSION
↓

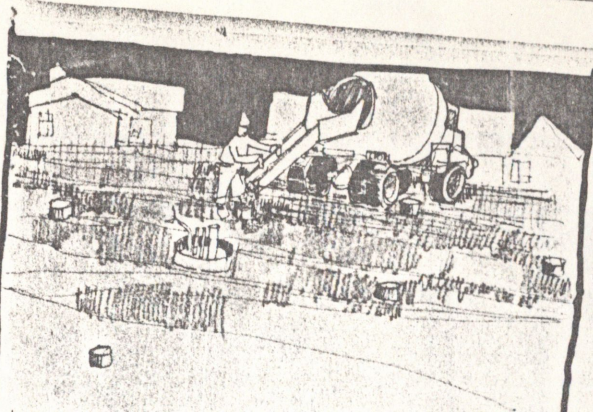


HIBSODD

Hib's Industrialized Building System for Owner Designed Dwellings

This diagram illustrates the procedure by which anyone interested in obtaining a new home, shop, or store with the advantages of both architectural and low cost design to fit their specific needs may do so.

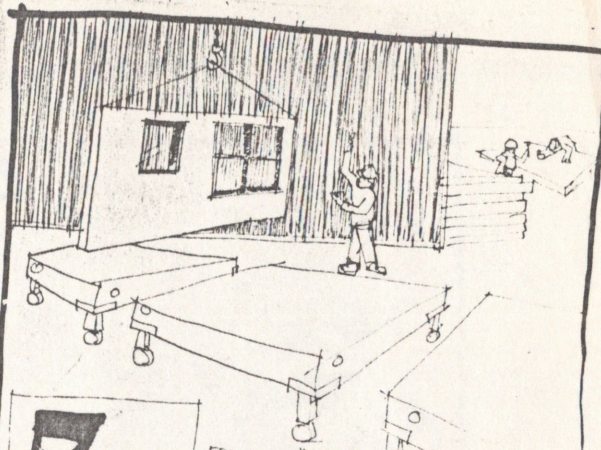




6

0 1 2 3 4
WEEKS (APPROX)

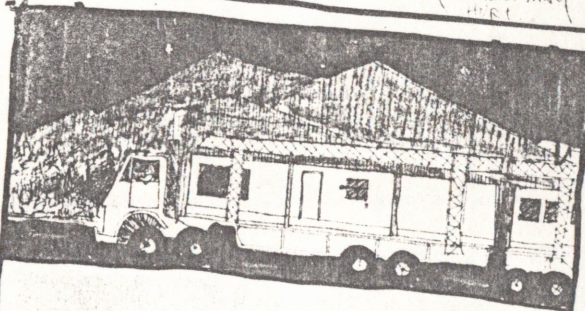
THE FLOORING AND SERVICE
PORTIONS OF THE "CONSTRUCTION
PACKET" ARE CONTRACTED OUT
IMMEDIATELY. IDEALLY HIBBARD
WOULD BE ABLE TO PERFORM
THAT FUNCTION, BUT UNION PROBLEMS
AND THE EXTRA EQUIPMENT MAY
HINDER



7

0 1 2 3 4
WEEKS (APPROX)

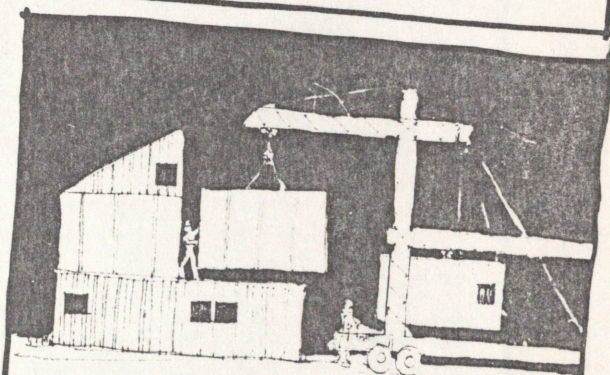
FROM THE "CONSTRUCTION PACKET",
THE FIBERGLASS BULKHEAD ASSEMBLES
THE PARTS FOR SHIPMENT AND ALSO
THE ACCESSORIES, AND LOADS THE
TRUCKS AS REQUIRED.



8

0 1 2 3 4
WEEKS (APPROX)

ALL MODULES ARE TRUCKED TO
SITE ON SPECIAL CRANE
TRUCK.



9

0 1 2 3 4
WEEKS (APPROX)

THE BUILDING IS ASSEMBLED
FROM THE TRUCK AND THE
CONNECTIONS ARE MADE.



10

0 1 2 3 4
WEEKS (APPROX)

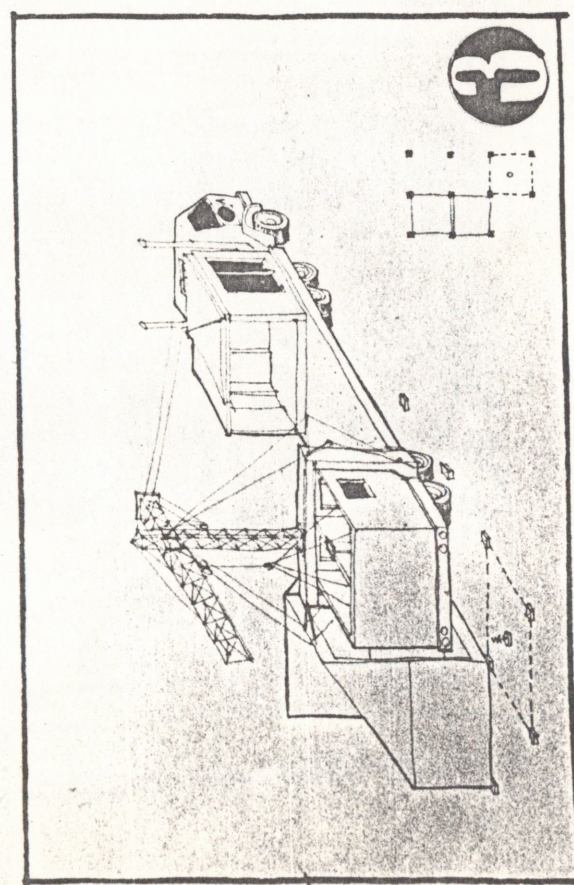
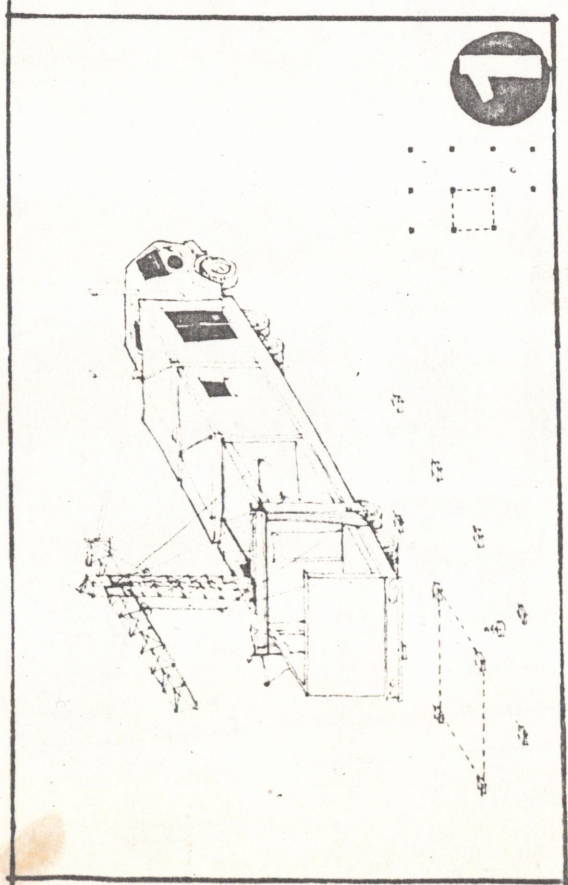
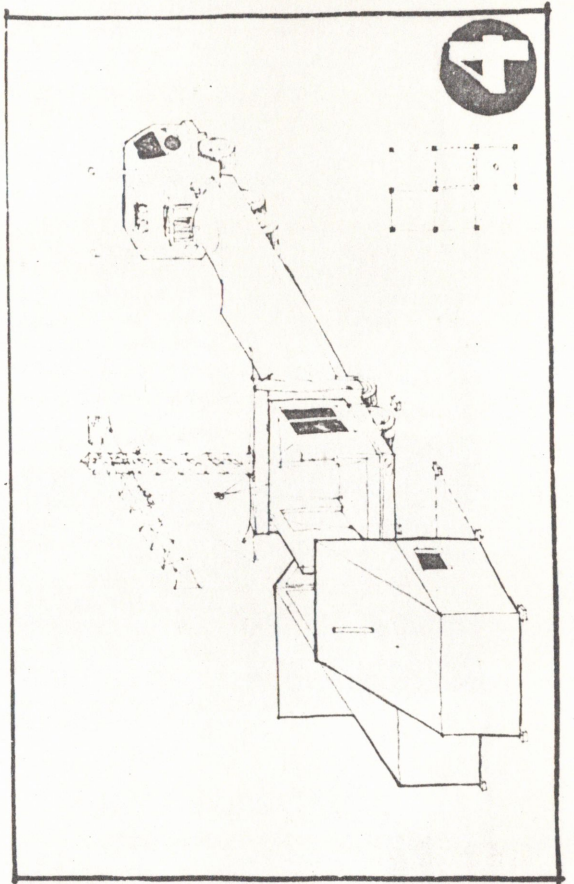
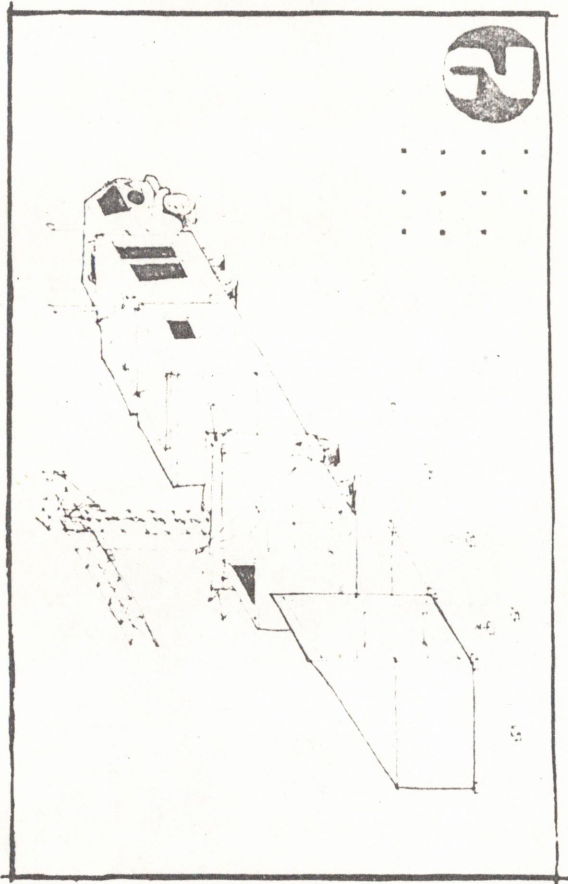
FINISH WORK OF CONNECTIONS etc.
PAINTING - RUG LAYING - THIS FINISHING
OF JOINTS - CAN BE DONE BY
CLIENT IF SO CONTRACTED.



11

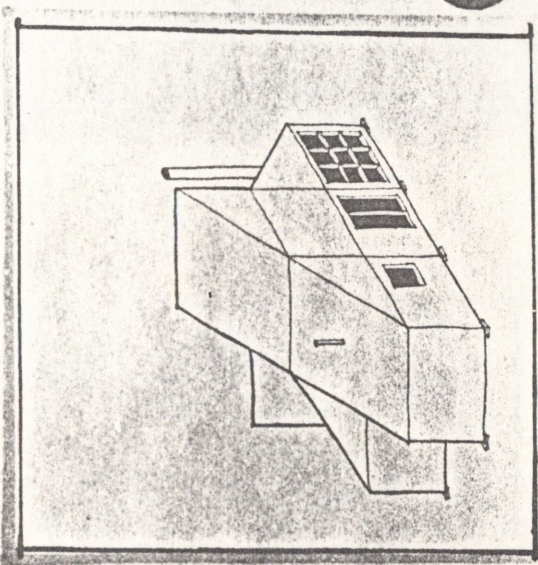
0 1 2 3 4
WEEKS (APPROX)

THEY MOVED IN THEIR
FURNITURE AND MADE
IT THEIRS AND LIVED
HAPPILY EVER AFTER! WHO
WAS IT THAT SAID THAT
MESSIAH THAT CAME AND
WENT SO FAST AND DID SO MUCH?

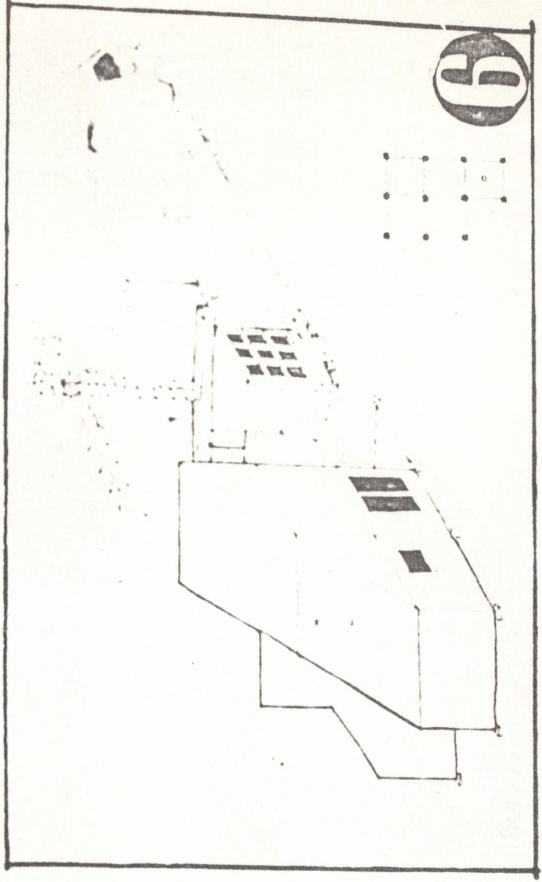


3

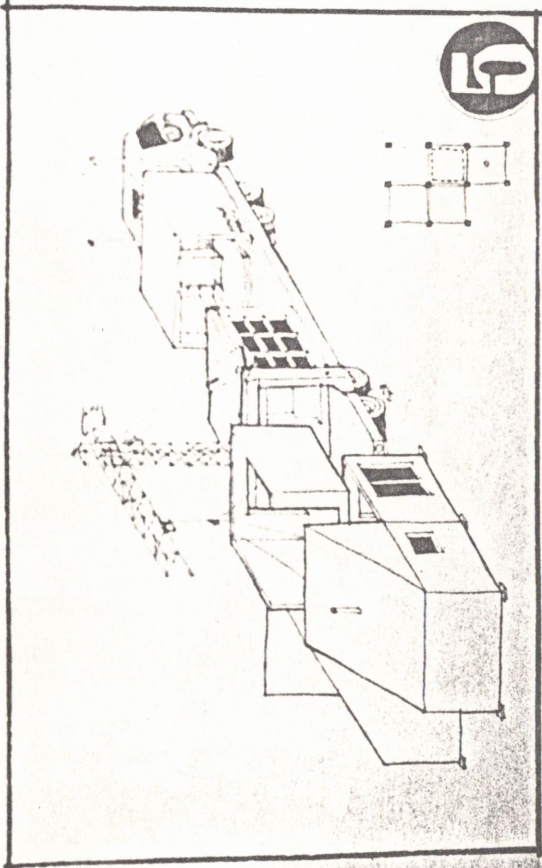
7

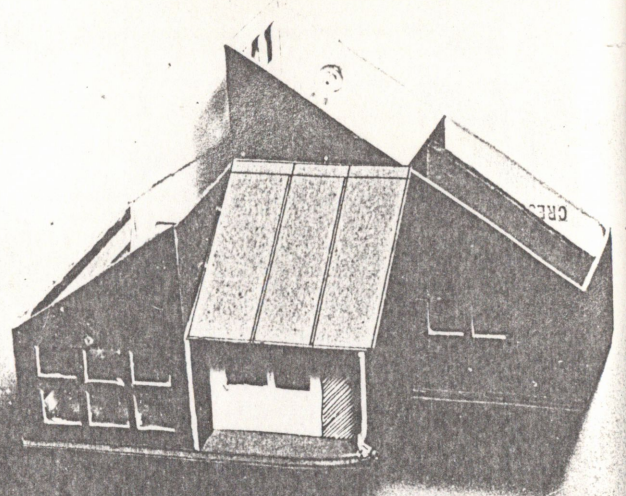
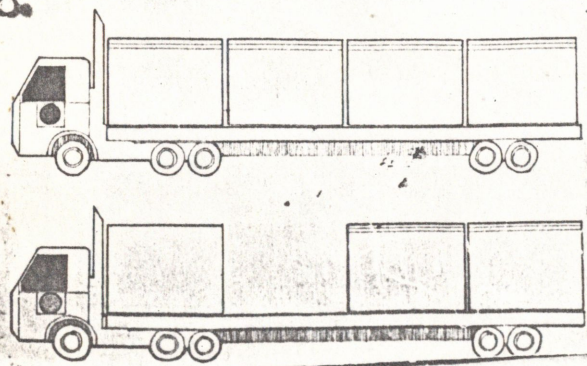
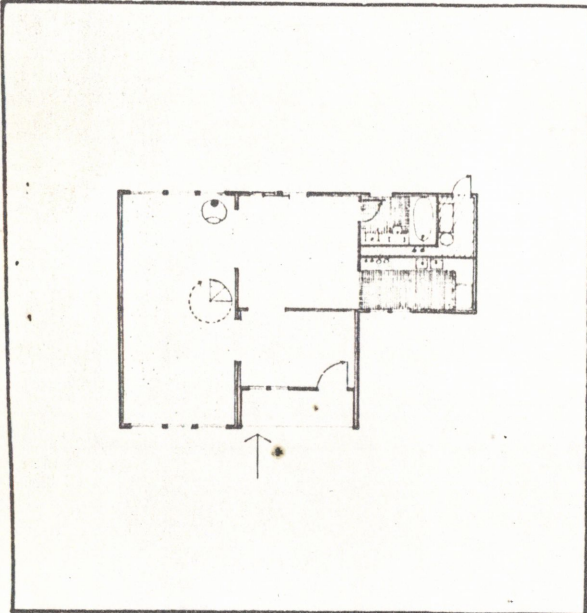
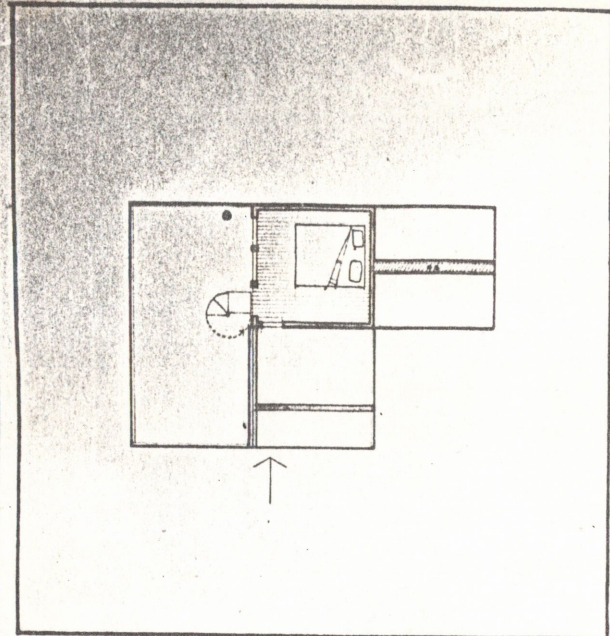


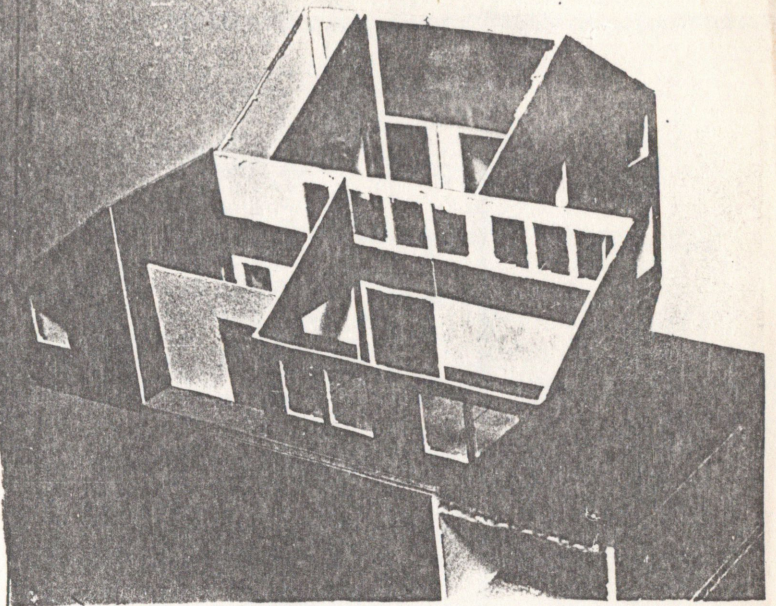
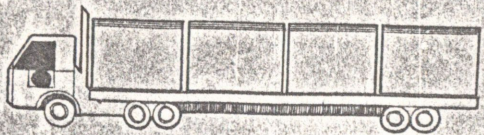
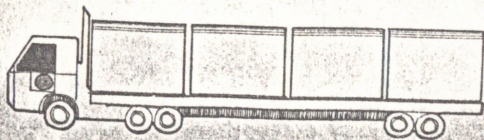
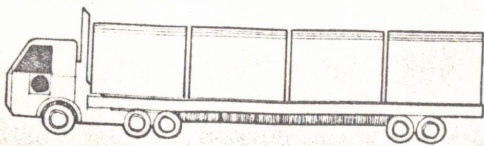
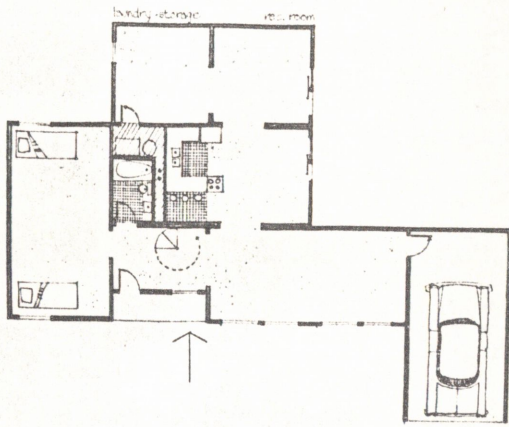
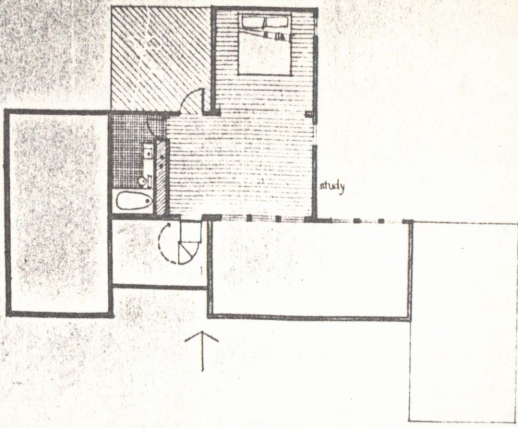
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5

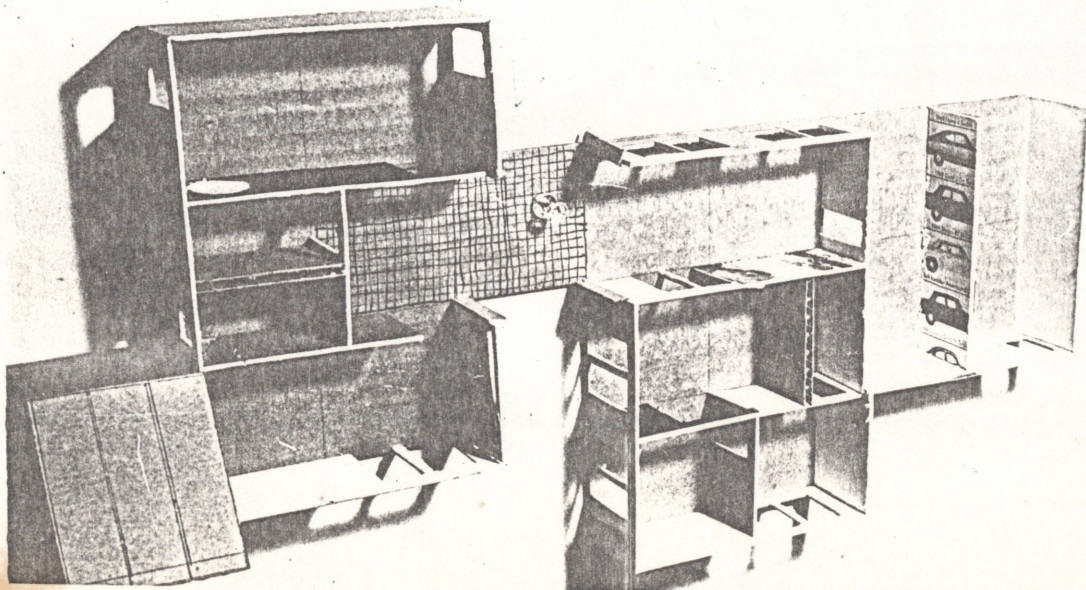
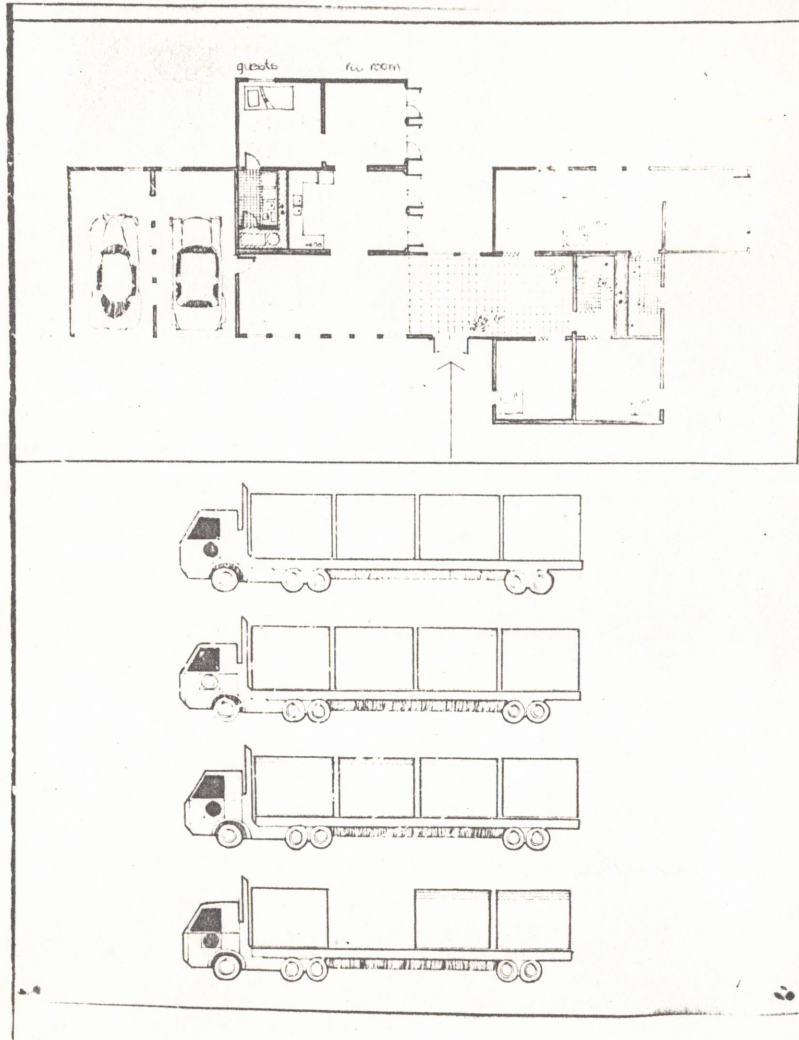






VERSATILITY
OF THE
SYSTEM.

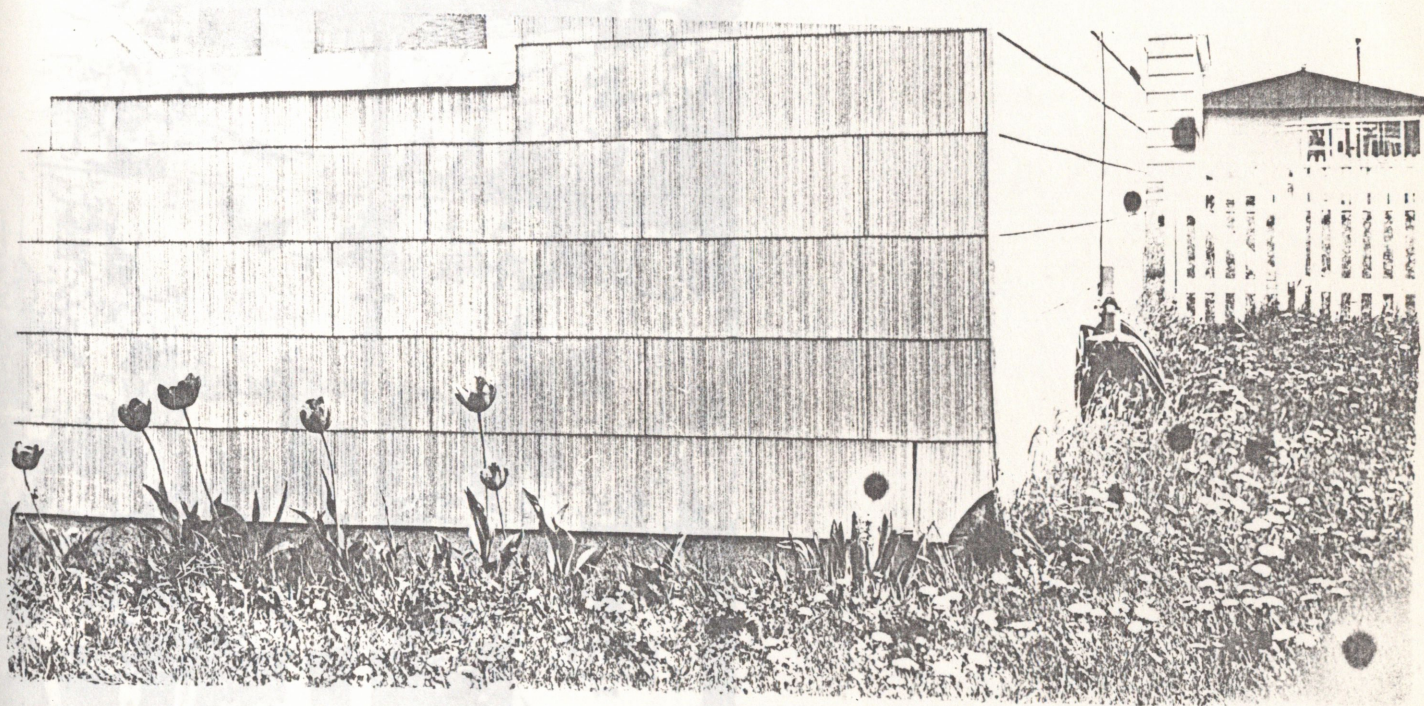
SUCCESS of INDUSTRIALIZED
SYSTEMS ~~AND~~ IS THE
DEGREE of SIMPLICITY



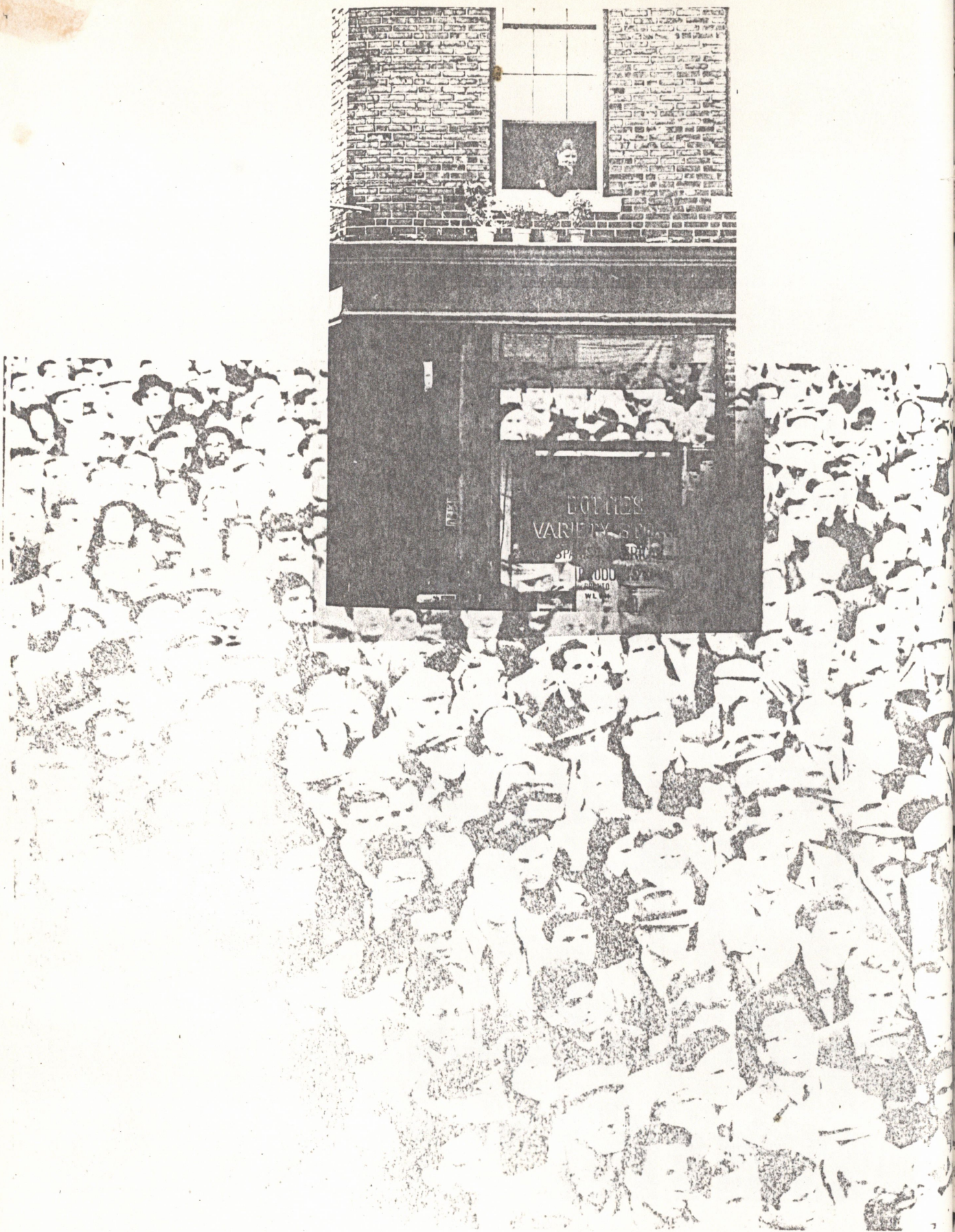
★ IF ONE BUILDS HIS OWN HOUSE - MORE THAN JUST AN INVESTMENT OF CAPITAL IS IN THE HOUSE - IT BECOMES MORE SUBJECTIVE IN VALUE - CONSEQUENTLY ITS OWNERS MAY HAVE LESS TENDENCY TO ASPIRE^{TO} COMPETITION IN SOCIAL MOBILITY BY USING THIS CAPITAL INVESTMENT.

GOOD ARGUMENT FOR HOUSES DESIGNED FOR THE SPECIFIC INDIVIDUAL AND HOW IT COULD CHANGE SOCIAL PHILOSOPHY (THAT IS, HOUSES THAT THE OWNER CAN MANIPULATE IN MANY WAYS HIMSELF TO MEET HIS NEEDS).

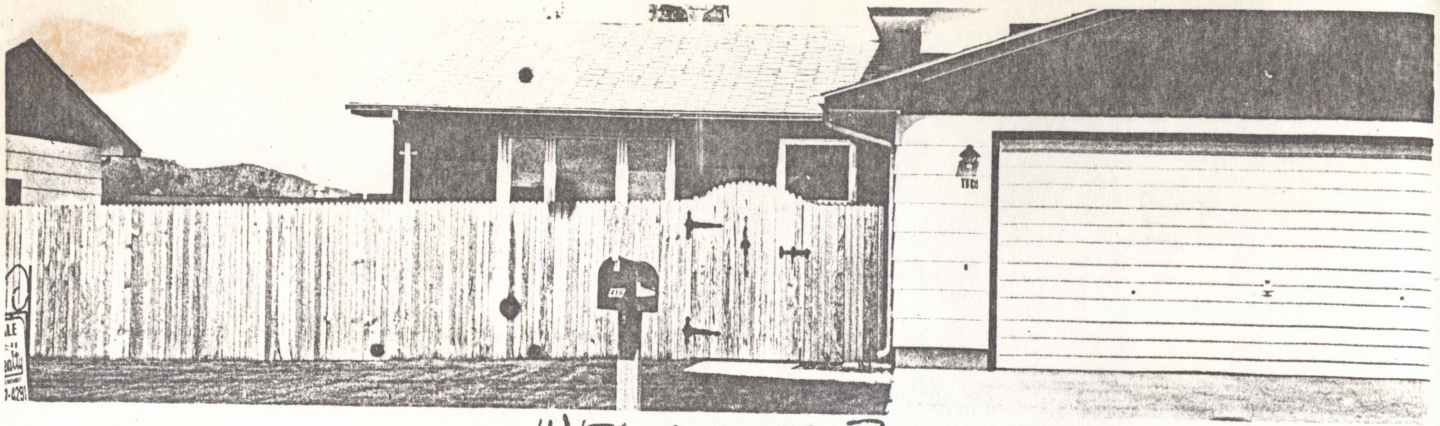
DEVELOPMENT TRACT RESIDENTS CONSIDER HOME MORE INVESTMENT OF CAPITAL.



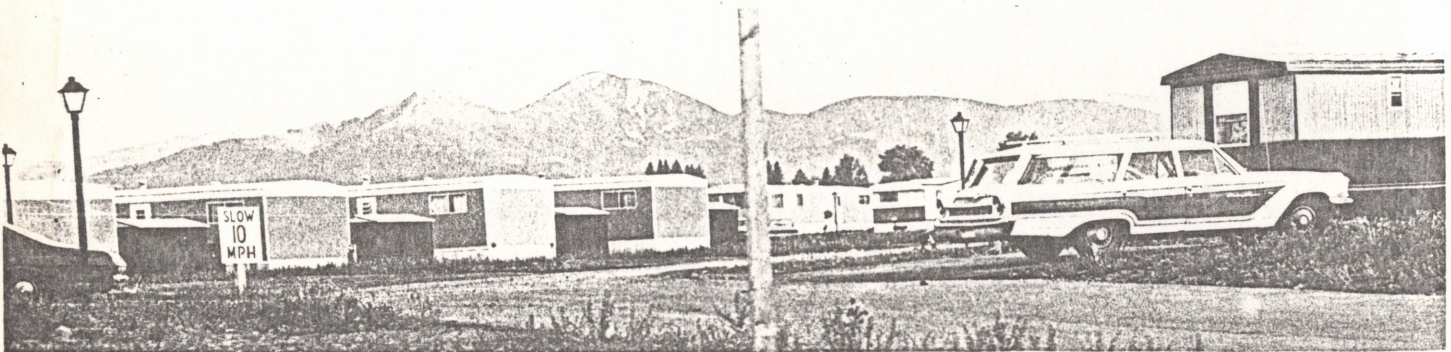
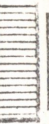
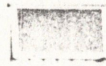


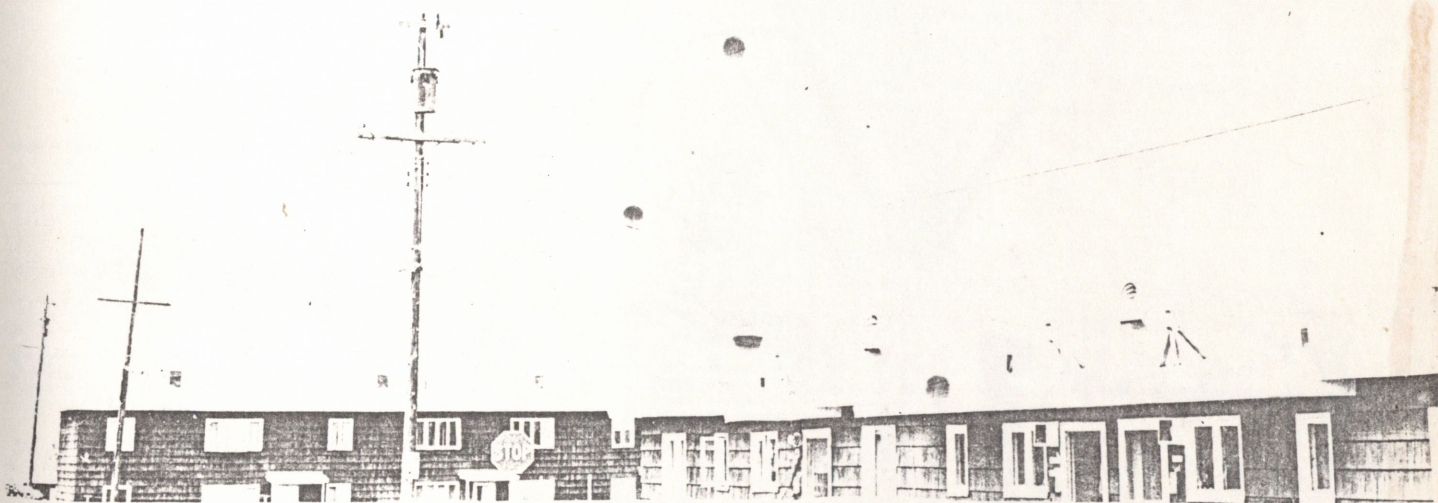
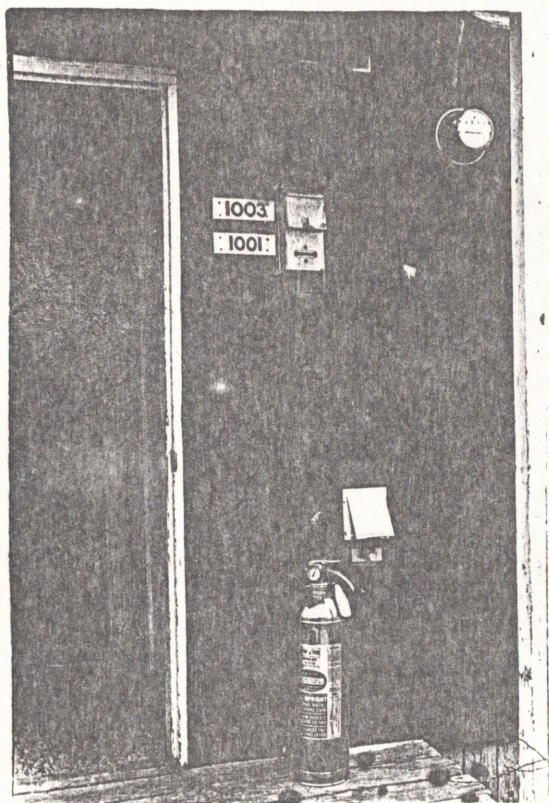


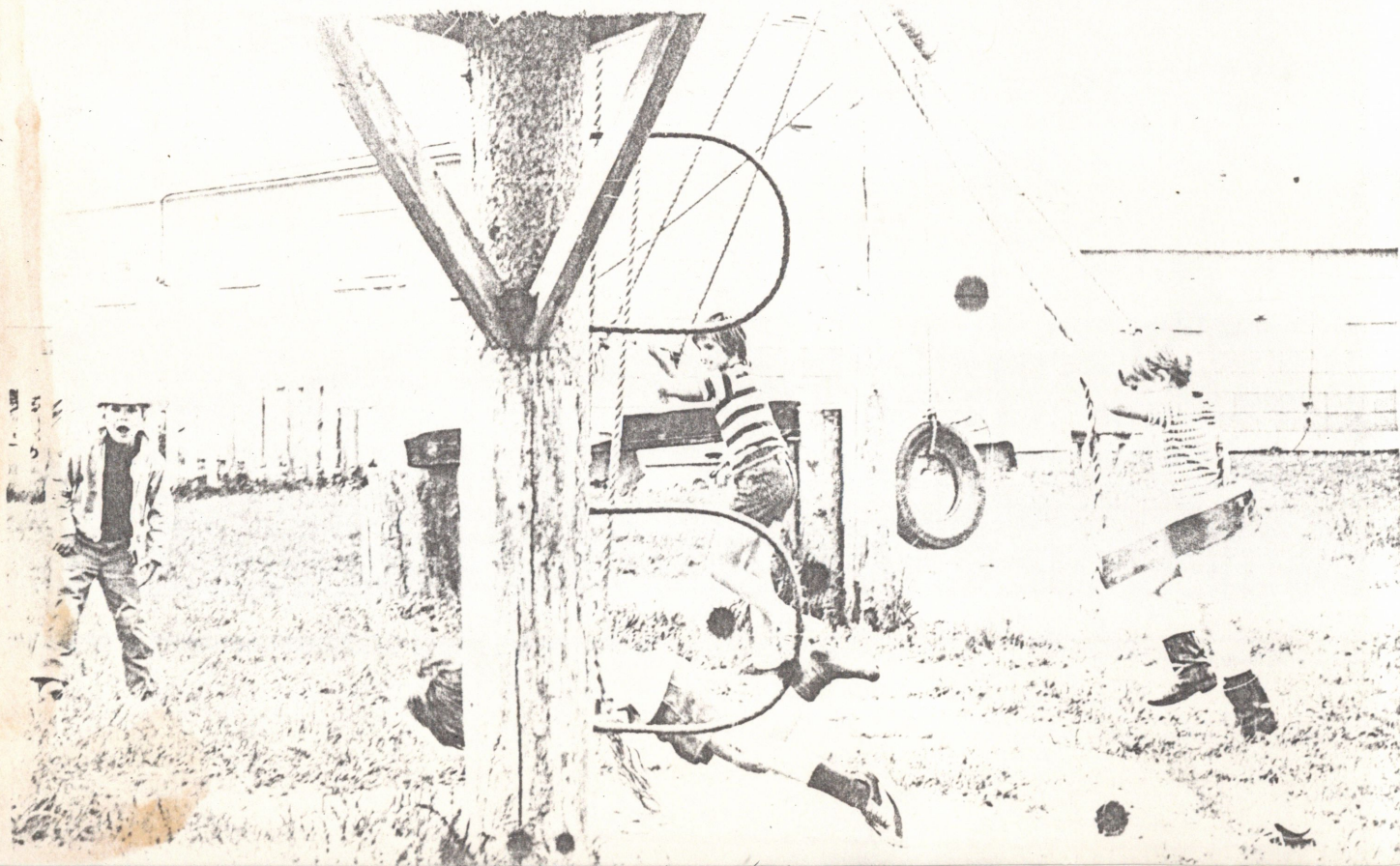


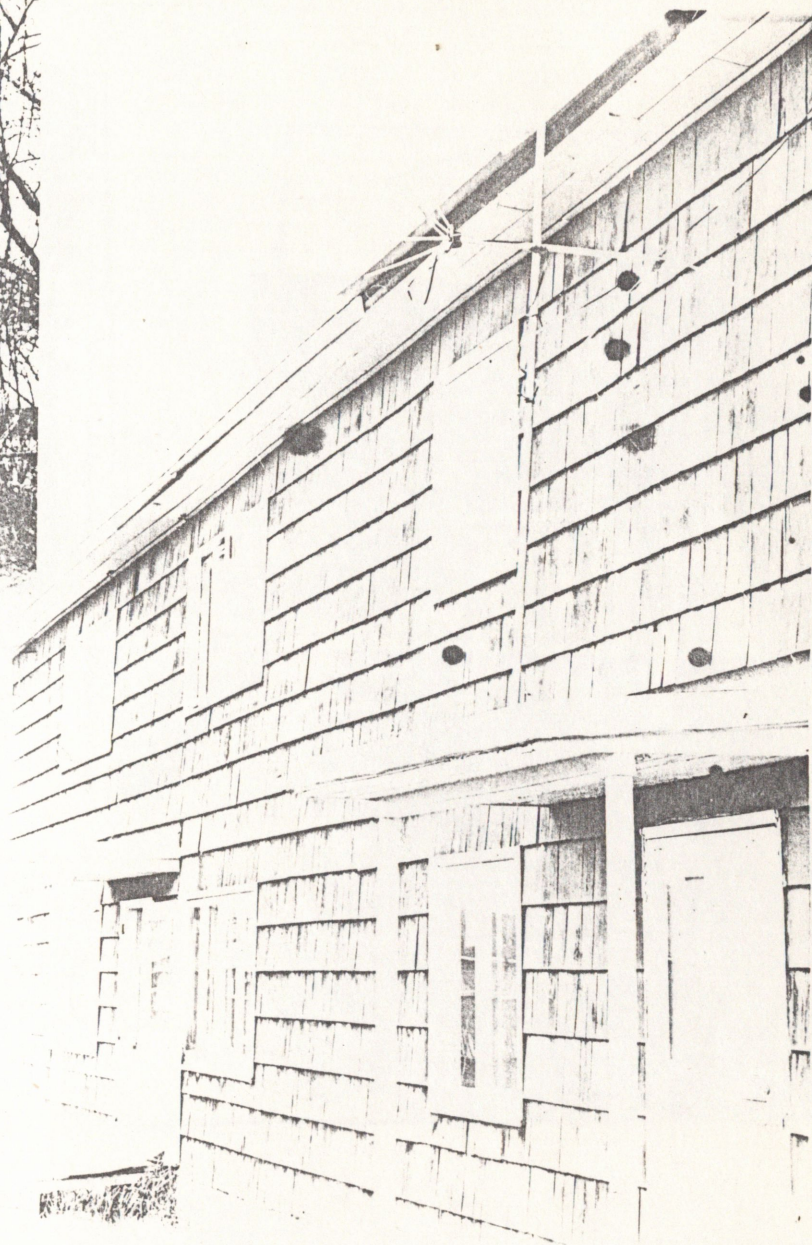
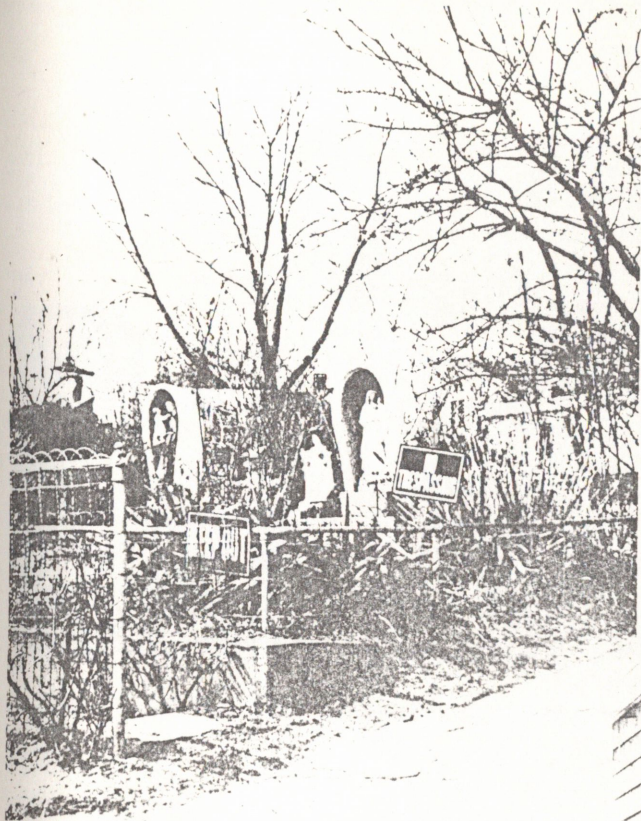


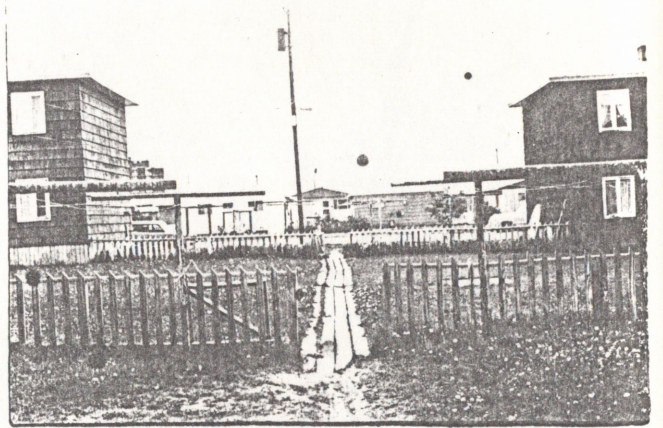
WELCOME ?

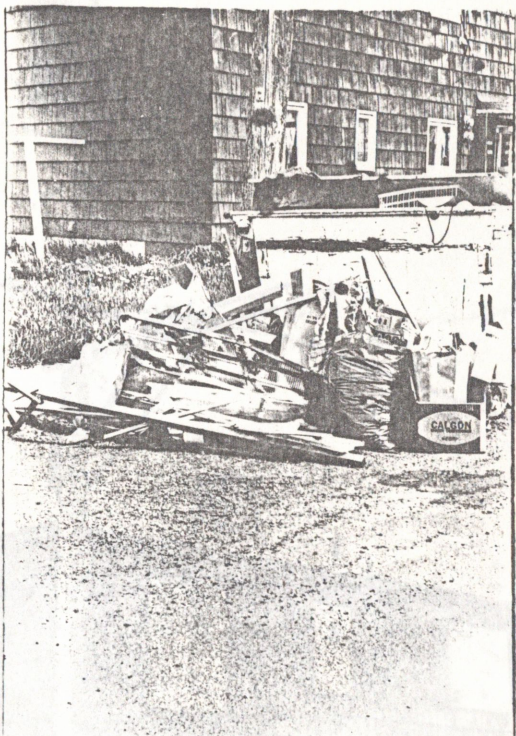


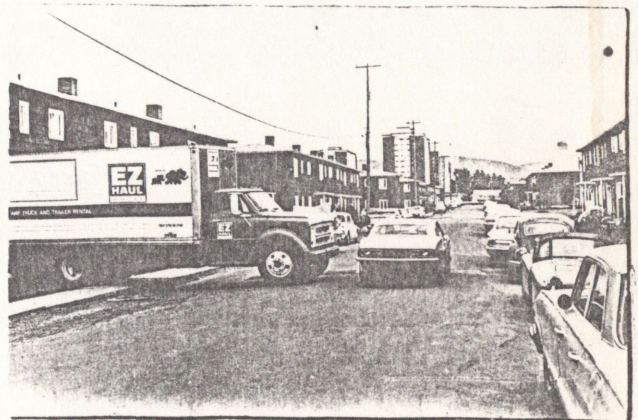
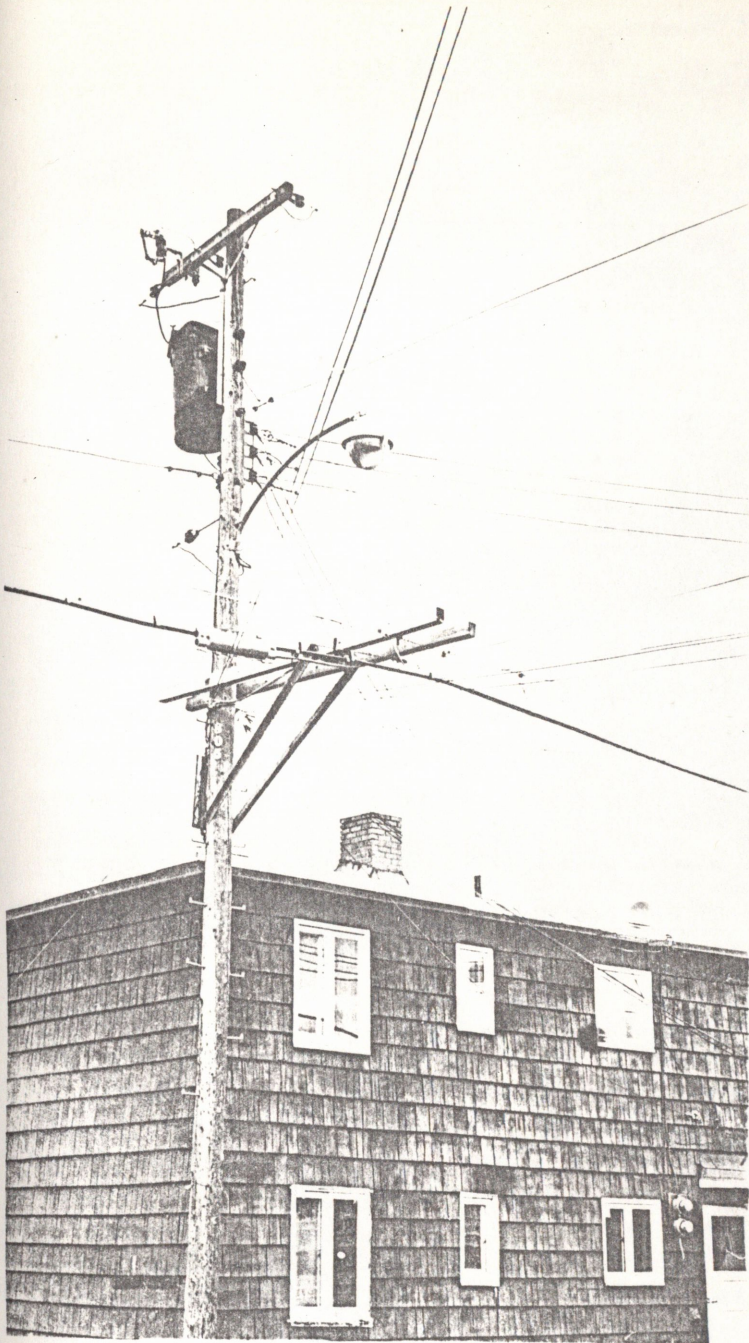




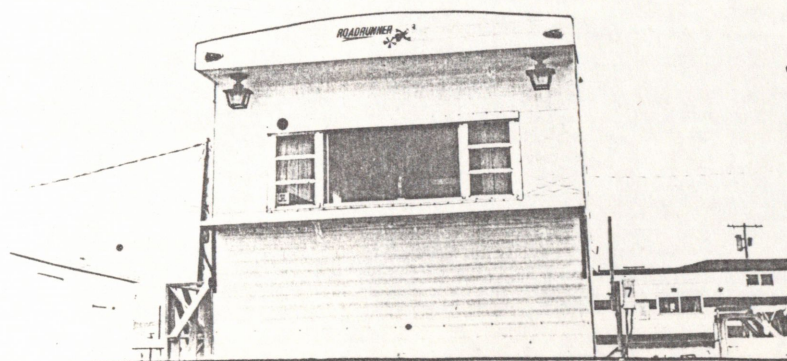
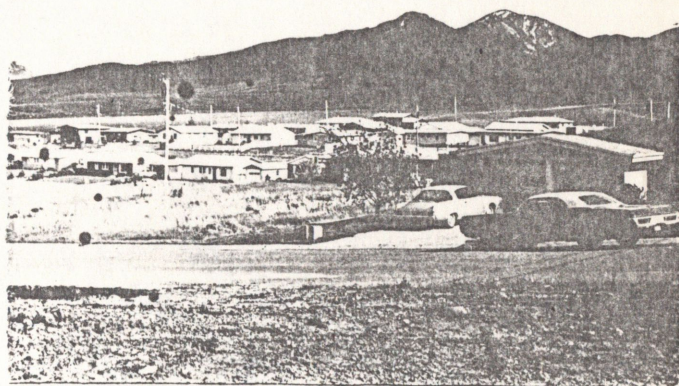
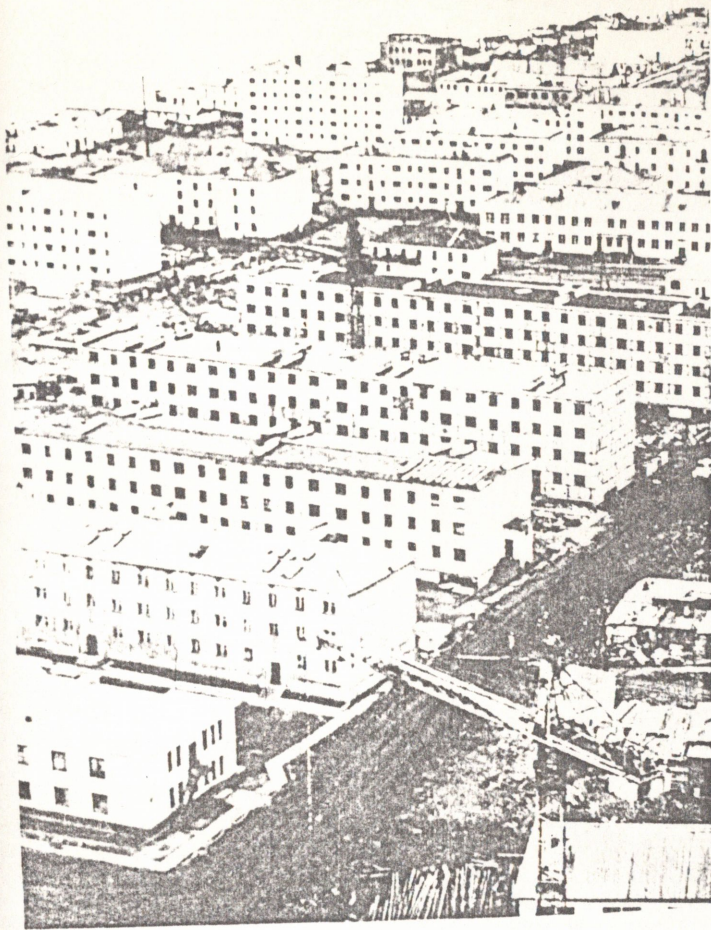






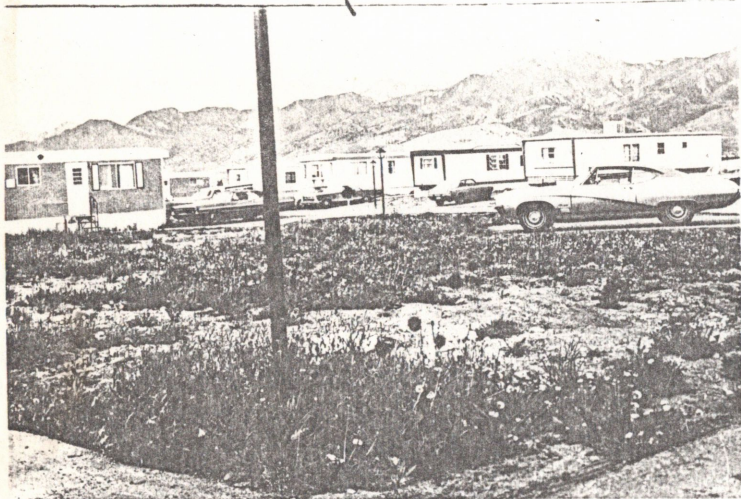






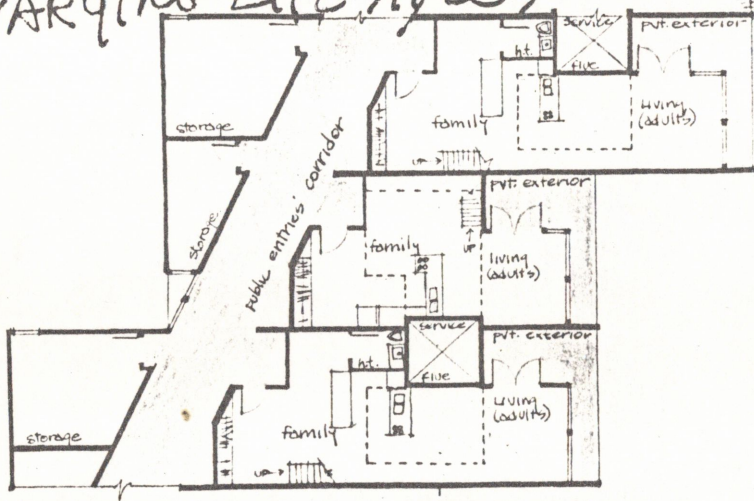
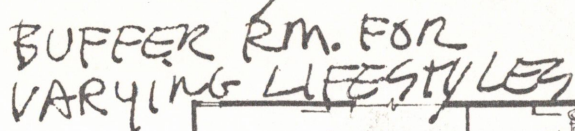
49

DEMOBILIZED
CONDOMINIUMS.
LIFE EXPECTANCY of 74 yrs.
pseudo capital investment
at 26% income toward
RENT FOR LOT.



Community Built (By the
city) Apartment condominiums
supply immediate housing -
centralize the city - control
growth planning AND ARE
NOW FHA APPROVED. FOR LOANS 20.

MAIN F. PCH

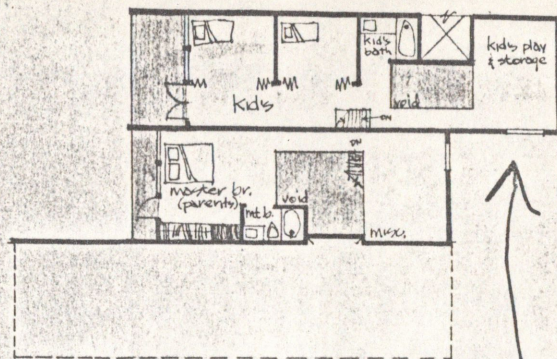
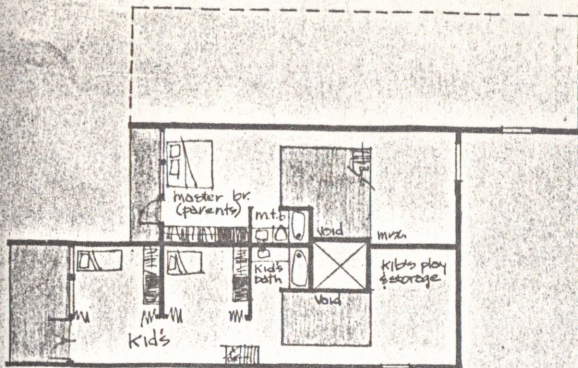


- couple
 - couple of friends
 - two friends
 - couple of days
 - couple of weeks

2

high-rise apartment

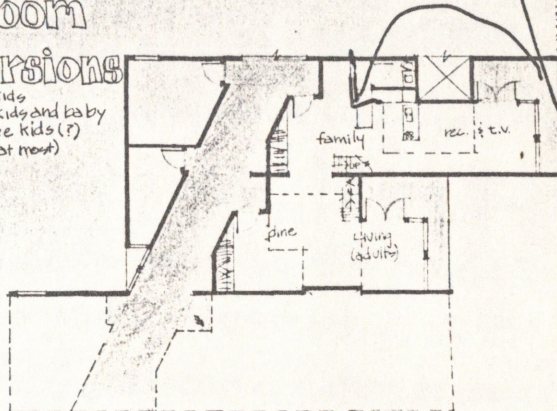
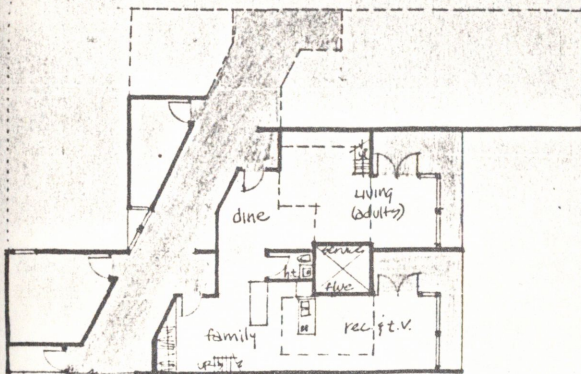
GENERAL IN context.



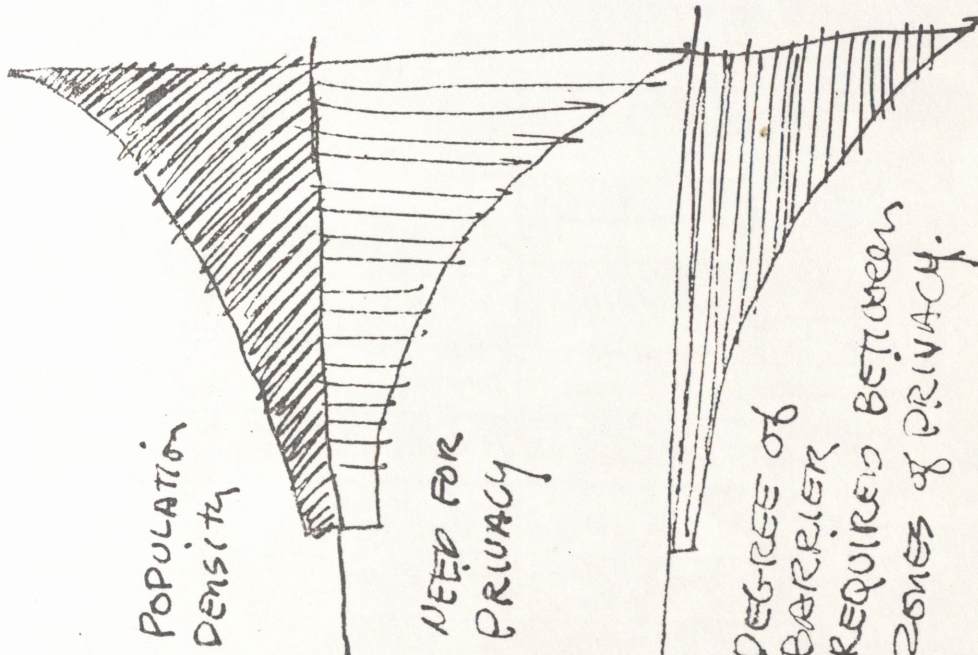
3 bedroom

Conversions

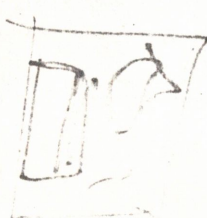
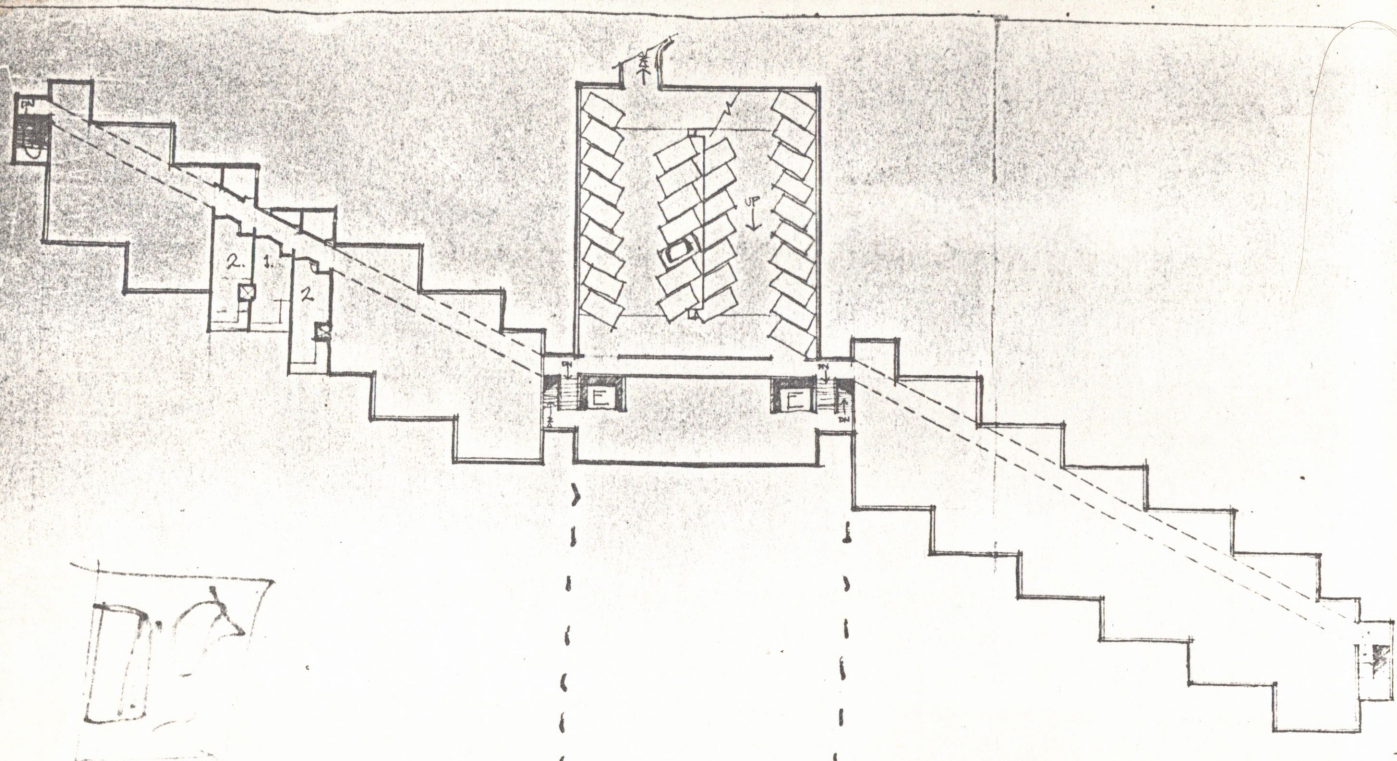
- couple w/ two kids
- couple w/ two kids and baby
- couple w/ three kids (?)
- five friends (at most)



DESIGNED FOR DENSE
community situations.

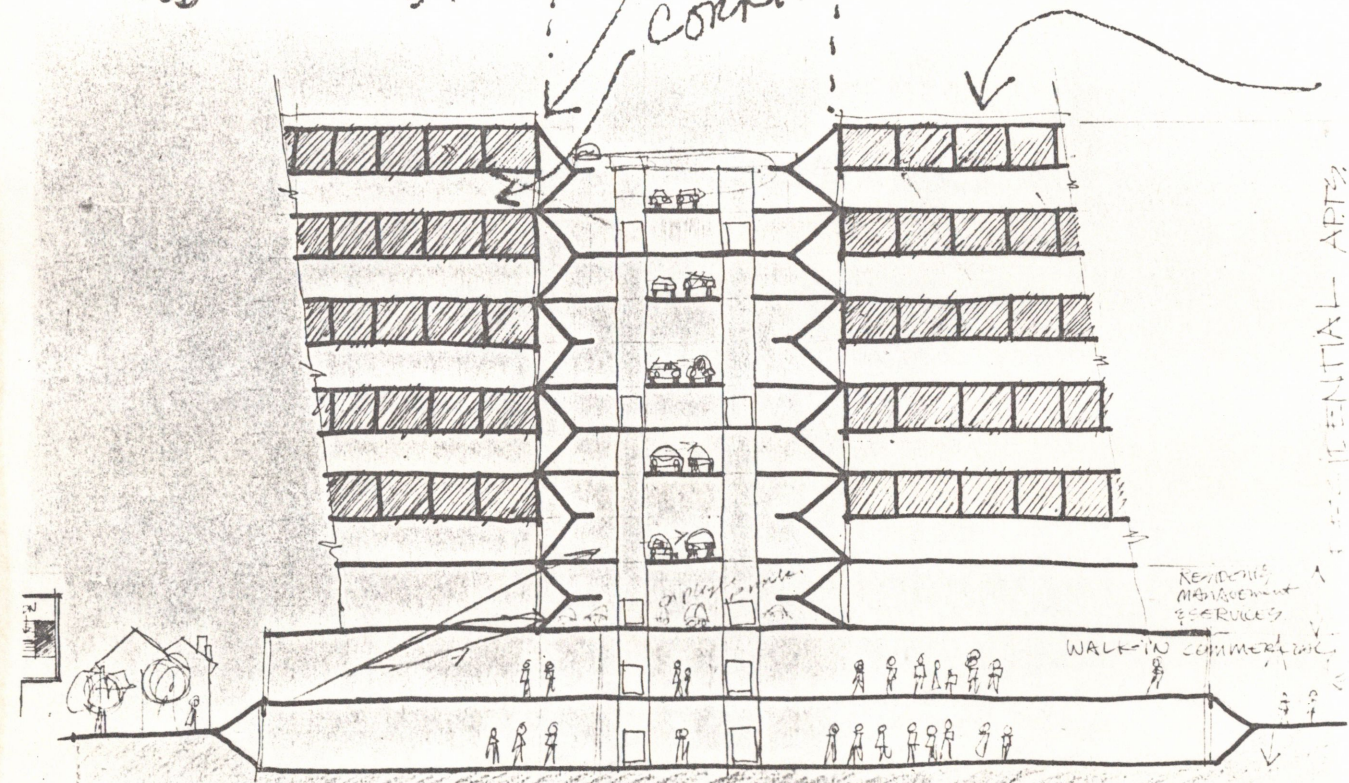


12. Domains become critical
with density!



ROOMS

CORRIDORS



RESIDENTIAL APARTMENTS

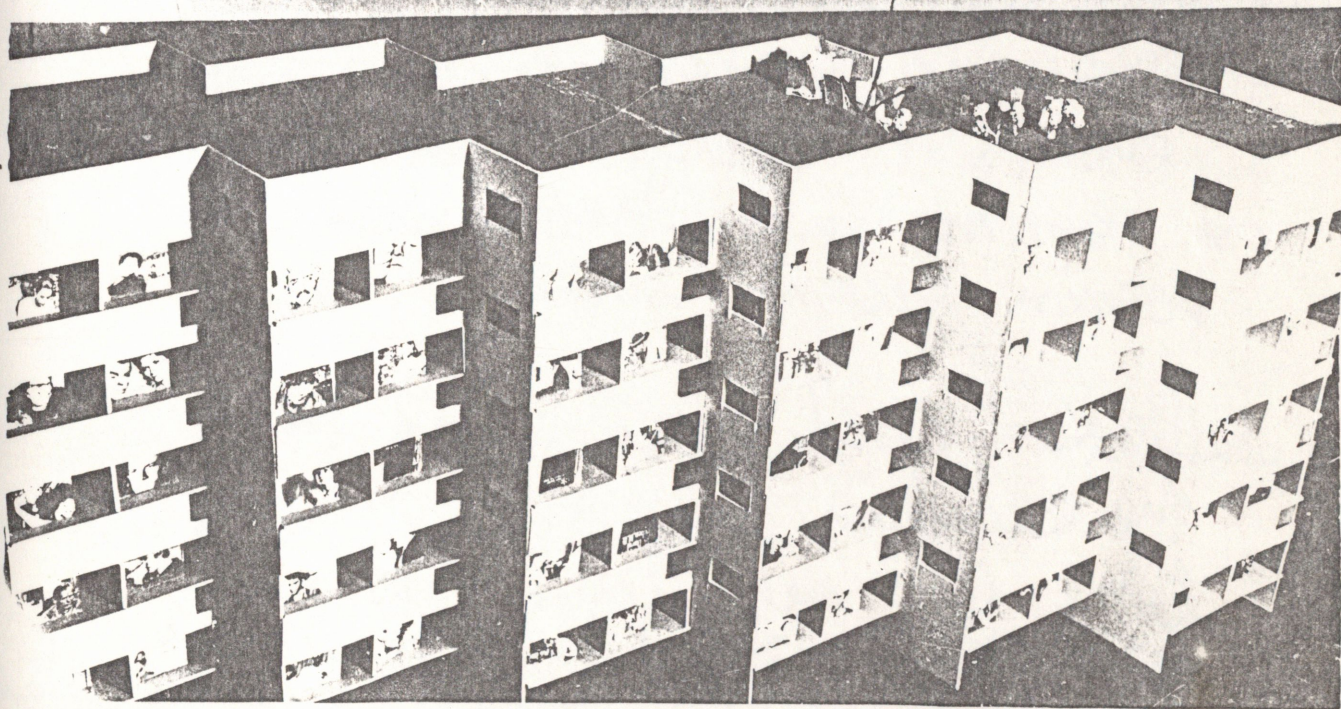
WALK-IN COMMERCIAL

section - west-east

★ as density goes up -
need for privacy goes up -
then need for more space goes up -
then costs go up. -

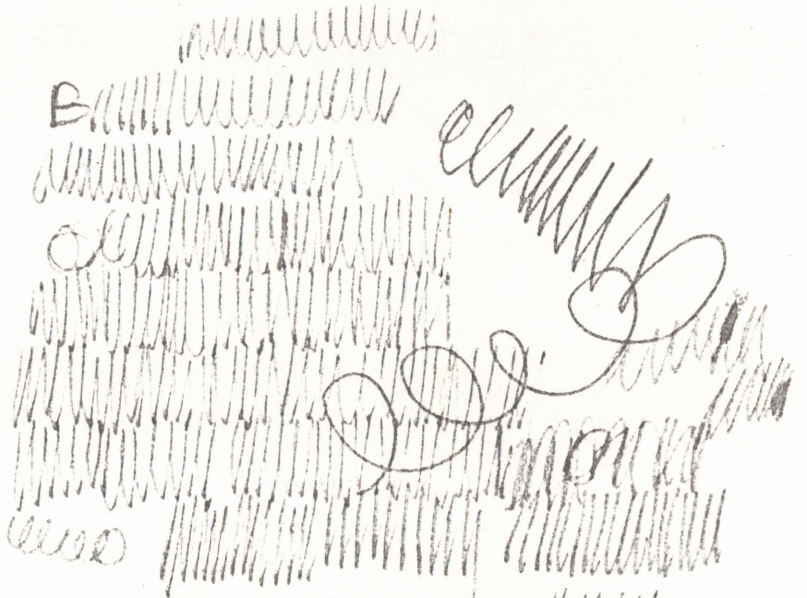
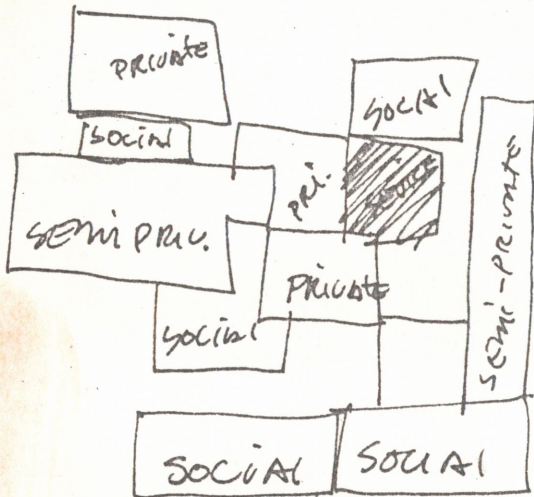
INDUSTRIALIZE to cut costs. KEEP simple for
INDUSTRIALIZED construction. CONC. WALL
BEARING PANELS. COPPER PLUMBING THROUGHOUT,
FLOP TOP ELEVATORS, USE OF NATURAL
PHENOMENA, MINIMIZE external environmental
SKIN, HOT WATER HEAT, WALL HUNG TOILETS
& SINKS - ALL WALL CONNECTING SERVICES -
WATER - ~~THE~~ SEWER etc., POSSIBILITY of
RESIDENT to finish interior, COMMUNITY
PRIDE BY COOPERATIVE ownership.

PLAY GROUNDS



#3

DIAGRAM BUILDING BY SOCIAL DESIGNATION.



ALSO. The GOVERNMENT, LOCAL AUTHORITY, PLANNER, ARCHITECT, LANDLORD, AND FAMILY POSITION (vs BUILDER & INDUSTRIAL DESIGNER) IS PSSITAK PG. 3. "BREAK DOWN OF DESIGN DECISION MAKING. PG. 7

CHECK - cost reductions By The Resident designing his own! Labor time and need for skilled work.

NOTE - Greater cost difference occurs when the interior walls components are FINISHED etc see pg. 10

↑ TO HIGH RISE CONDOMINIUM SYMPTOMS
it is important to provide good
parking with all services

MANAGEMENT — New desires for
carefree aspects — such as no
LAWN GARDENING — EXPENSIVE REPAIRS etc.

SEE "community and privacy"

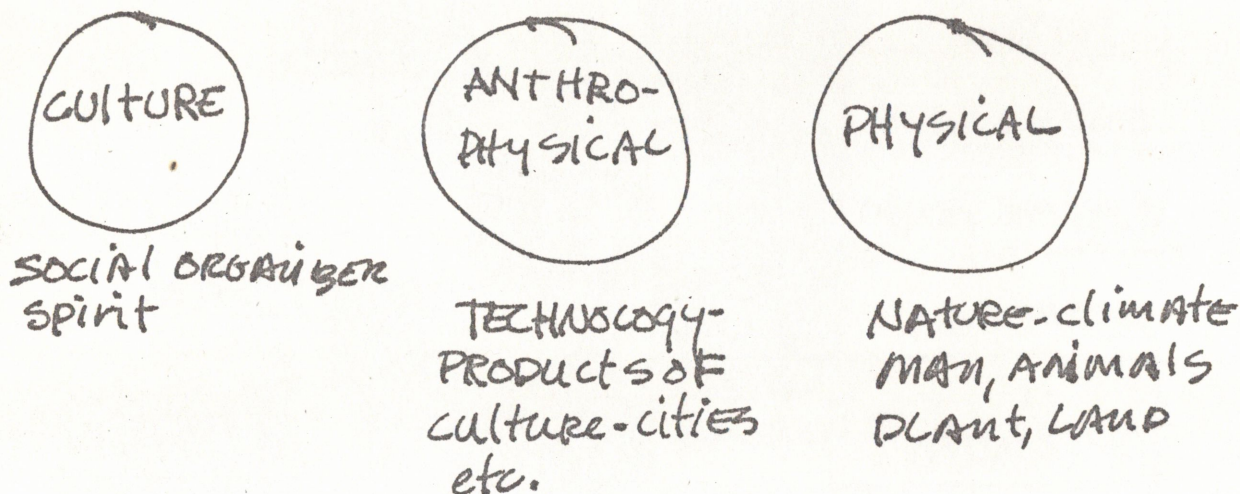
UNIT VARIATION to initiate economic
and social MIX — (Comment, People
will get to know who they want to
know — to assume that they will desire
to associate with people of same
status is dangerous.

ORIENTATION OF DESIGN INTEREST OF VARIOUS HOUSING TYPES

HOUSING- TYPE	TOKEN enemies	FUNCTIONALISM humanism	SPECULATIVE	OBJECT oriented
D. TRACT				
MOBILE HOME				
Custom Home				
APARTMENT.				
OPTIMUM?	INDIVIDUALLY oriented			

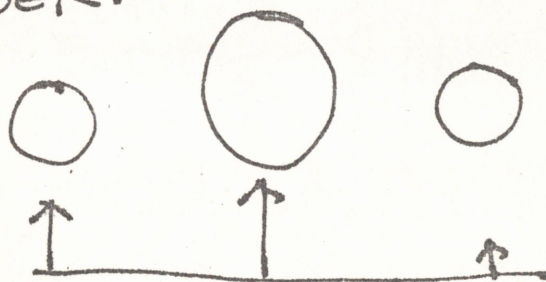
→ SUBCONSCIOUS RESPONSE is to quality
Functional-HUMANISM? "OBJECT" AS
SUBSTITUTION FOR UNSTABLE "TOKEN
HUMANISM."

THEORY OF "ORDERS OF EXISTENCE"



MUST BALANCE IN TERMS OF
HOW MUCH CONCENTRATION IS GIVEN
TO EACH BY MAN. THEY MUST EXIST
SYMBIOTICLY IN A FRICTIONLESS
COEXISTENCE. (NATURAL ORDER)

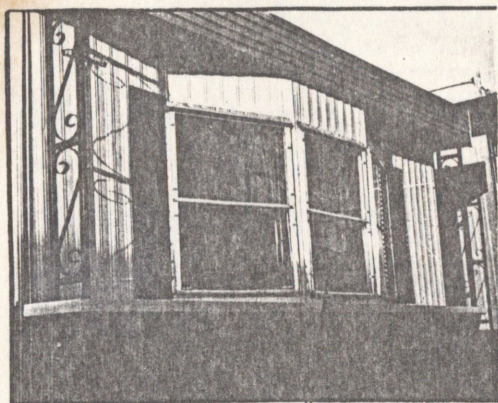
INDUSTRIAL REVOLUTION HAS
SWUNG CONCENTRATION TO ANTHRO-PHYSICAL
ORDER. consequently the



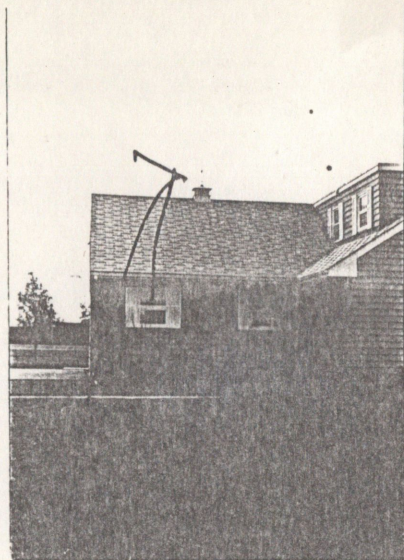
THIS CONSTITUTES A "DISORDER"
SINCE THIS DISORDER IS CULTURALLY
INSPIRED, SOCIAL REFORM IS
THE ONLY REMEDY.

THIS WAKE OF DISORDER
CAUSES SOCIAL VALUE DISORDER -
(DETRIMENTAL TO SAY THE LEAST.)
THIS IS STRONGLY RECOGNIZABLE
IN THE TYPICAL PHENOMENA.

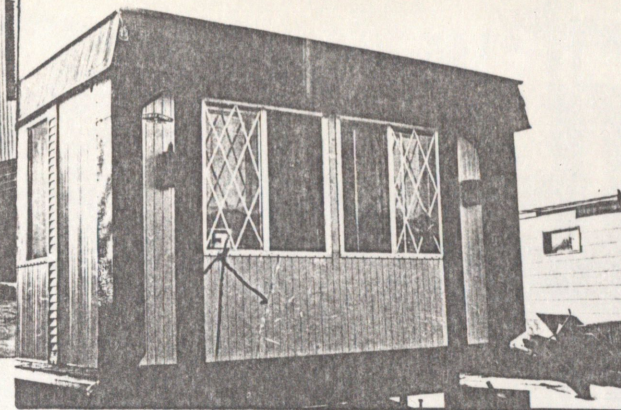
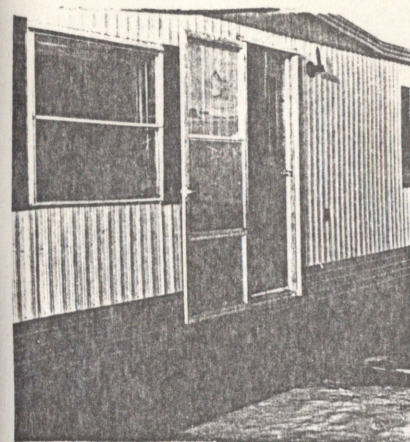
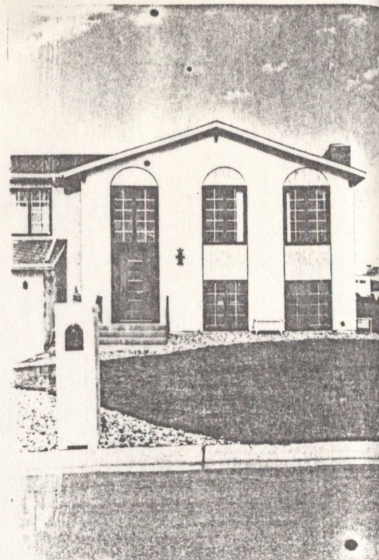
PEOPLE, IN THIS CONFUSED, DISORDERED
STATE RESPOND TO SURFACE ~~EMOTIONS~~
EMOTIONS AND ANY SEEMINGLY
STABLE ELEMENT OF ~~ON~~ ^{OBJECTIVE} ~~SUBJECTIVE~~
ATTITUDE. HENCE ~~OBJECTIVE~~
SUBJECTIVE VALUES ARE DEVELOPED.
(IE. PEOPLE DESIRE MANSARD ROOFS!)



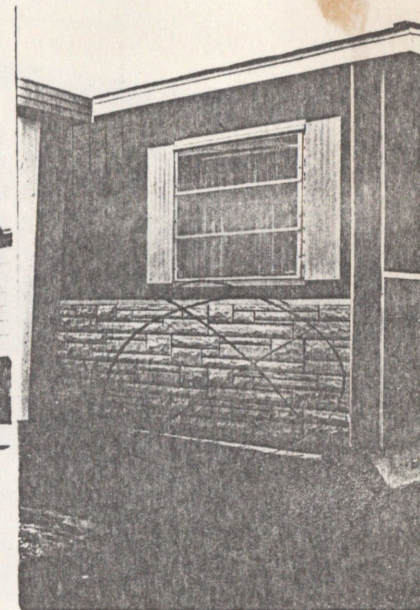
Bay window



Non-Functional Vene.

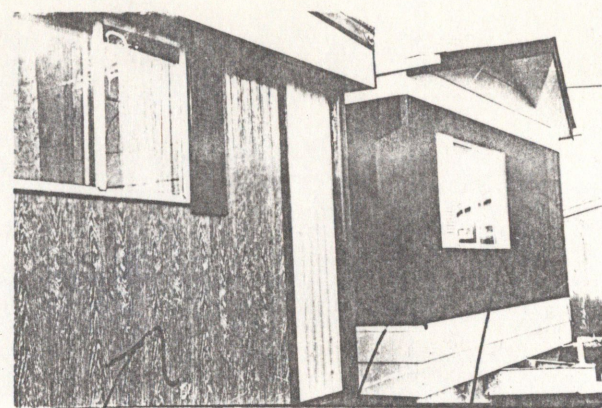
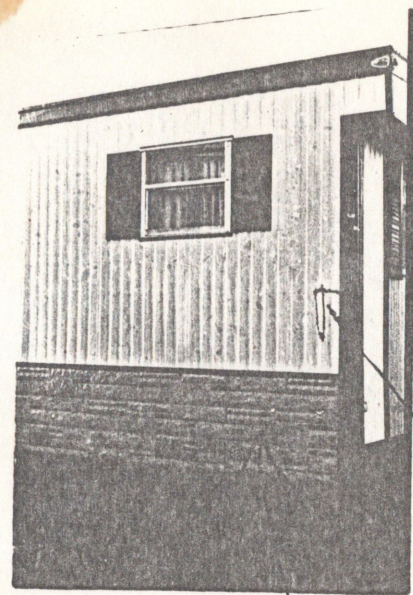


FALSE:
BAVARIAN
window
LEADED GLASS



VISU
TOK

AL
EN

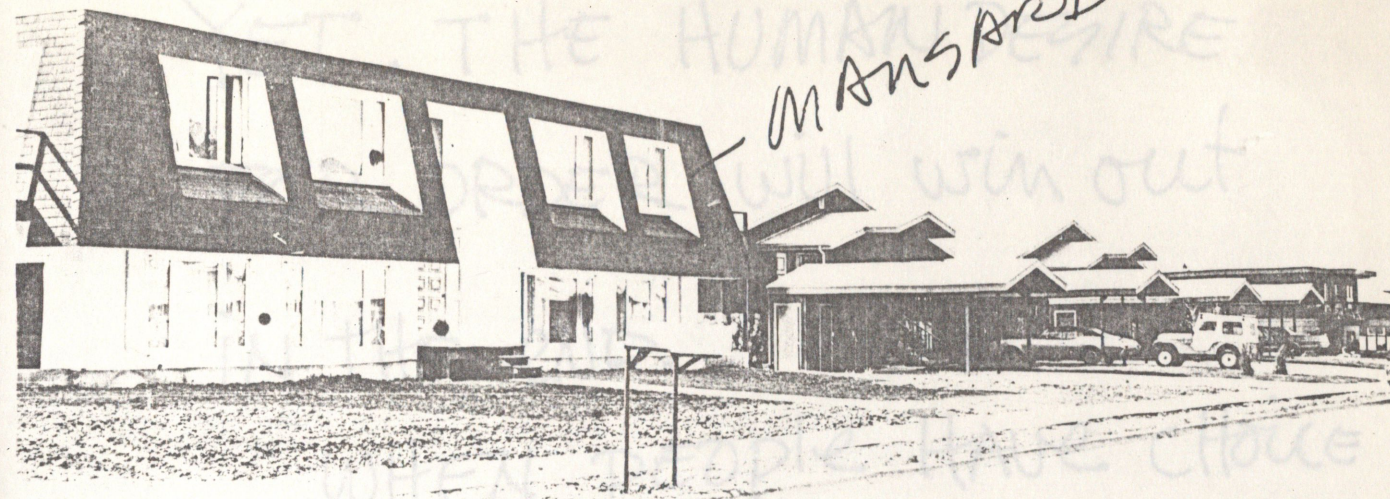


imitation rock

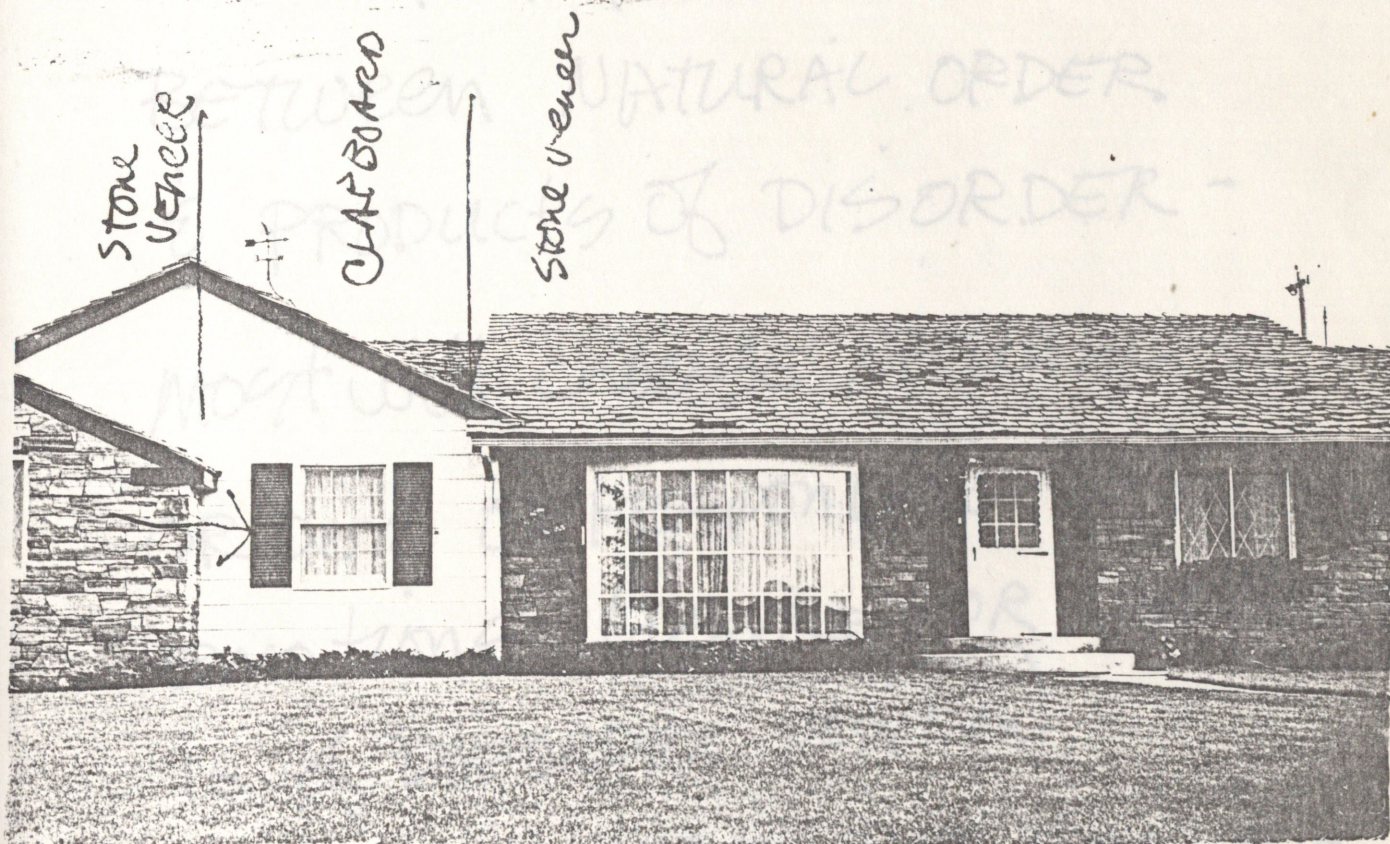
imitation wood

FAKE
SHUTTERS

EMENT



MANSARD



stone
veneer

CLAPBOARD

stone
veneer

TIES

HAVE
SALE
VALUE
TODAY!

YET, THE HUMAN DESIRE
FOR ORDER will win out
IN THE END.

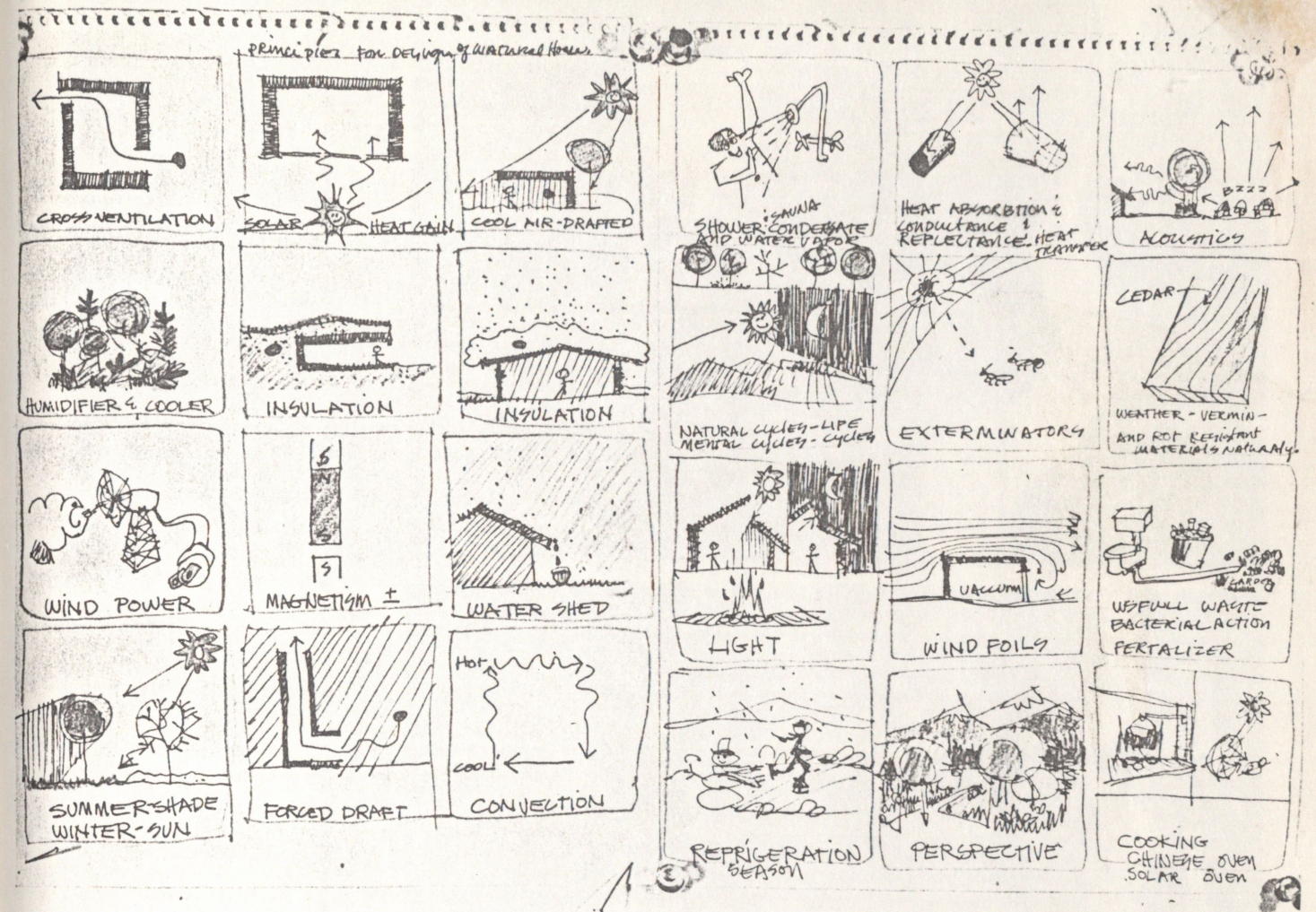
WHEN PEOPLE HAVE CHOICE
BETWEEN NATURAL ORDER
& PRODUCTS OF DISORDER -
MOST WILL CHOOSE NATURAL
ORDER OR RESPOND TO gut
EMOTIONS. (DESIRE FOR CAPITALISM
IS OF DISORDER POSITION)

ARCHITECTURE - AND HOUSING
THAT RESPONDS TO OR APPEALS
TO THIS NATURAL ORDER INSTINCT
IN PEOPLE ~~with~~ IS OF VITAL

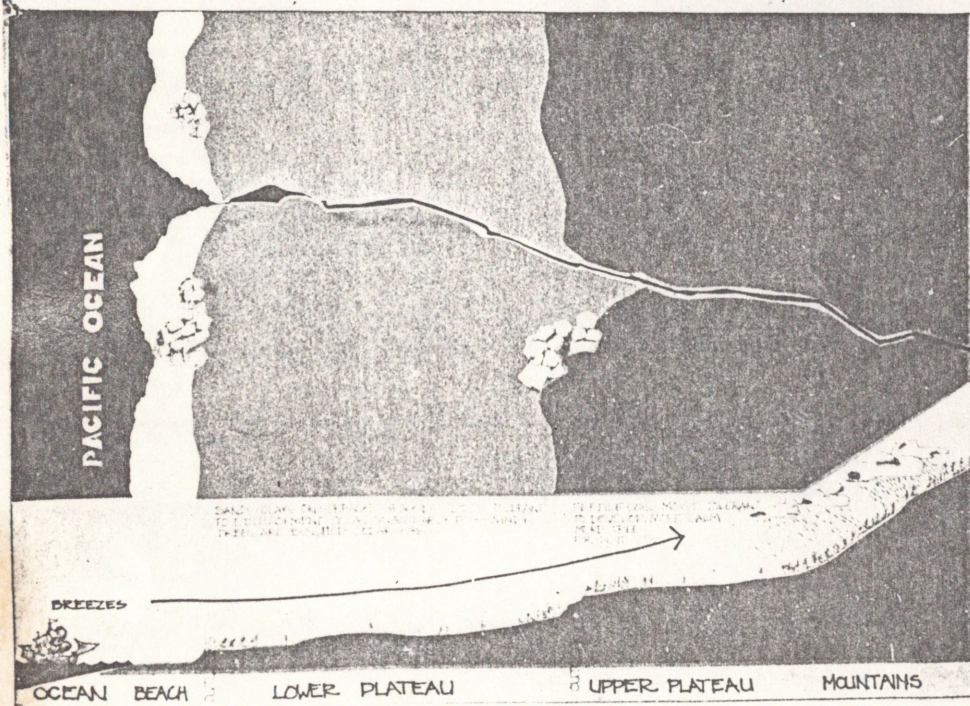
IMPORTANCE today.

to initiate social change
one must start at the living
core environment and restore
it to the natural order.

ALONG with social reform
by architecture, we must
help swing the concentration to
physical by architecture we need
to learn how to use ~~of~~ our
natural environment more
rather than rely on our technology
all the time. →



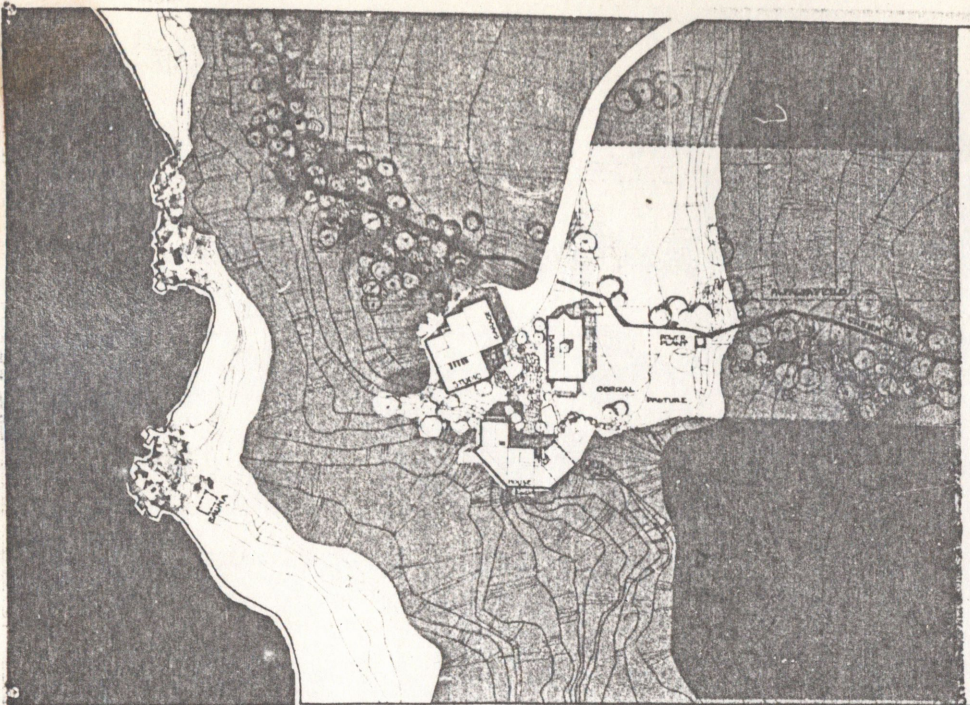
↑
→
A HOUSE DESIGNED TO TAKE
ADVANTAGE OF NATURAL ELEMENTS.



REGIONAL CONDITIONS



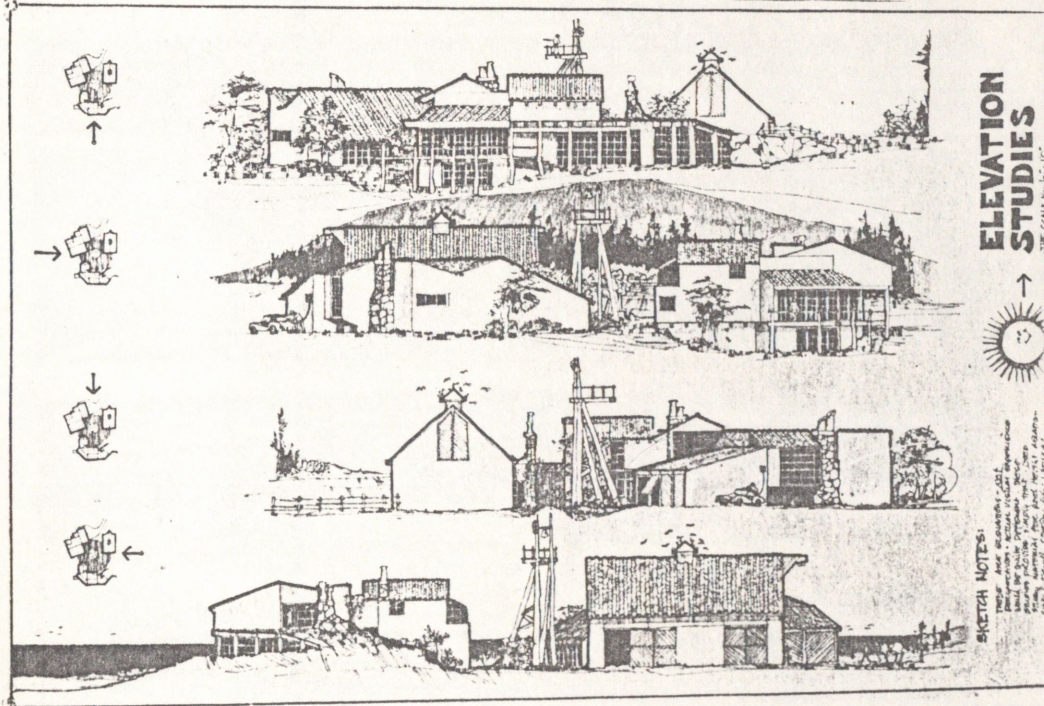
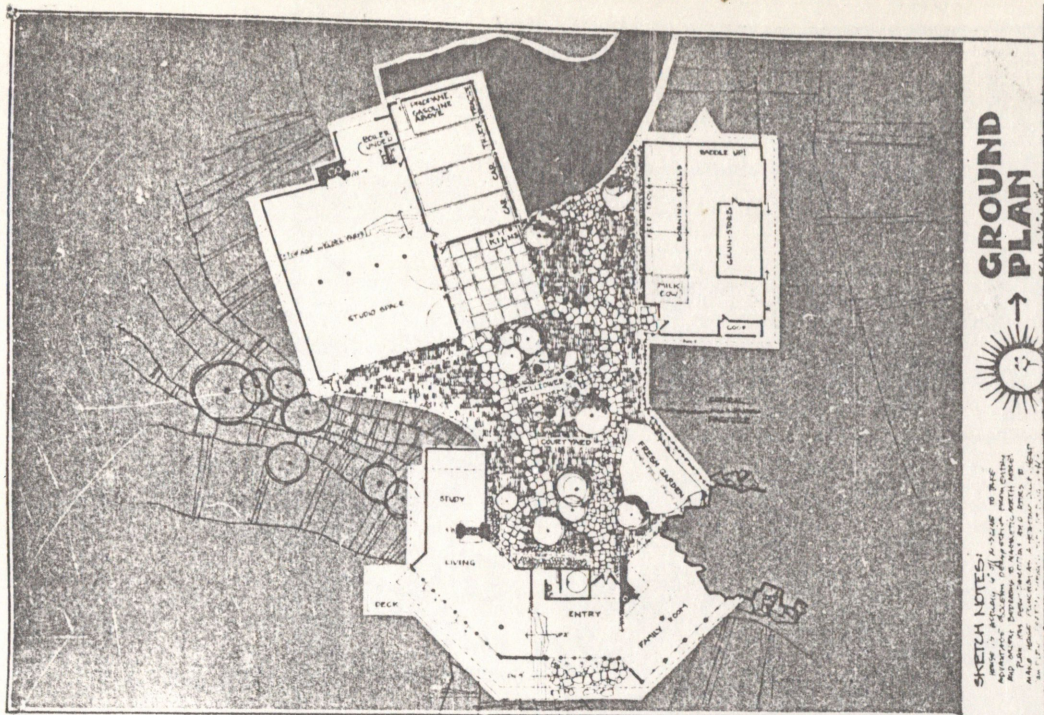
Sketch Notes:
 This map shows the general topography of the area. The profile line indicates the elevation of the land. The sun icon indicates the direction of the sun.



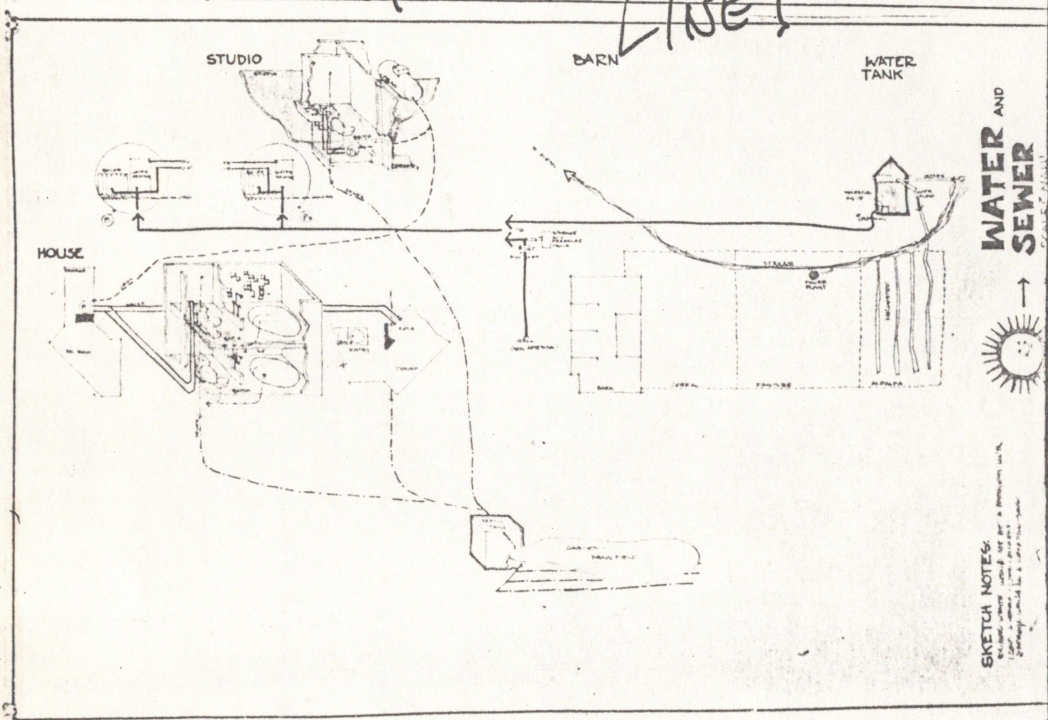
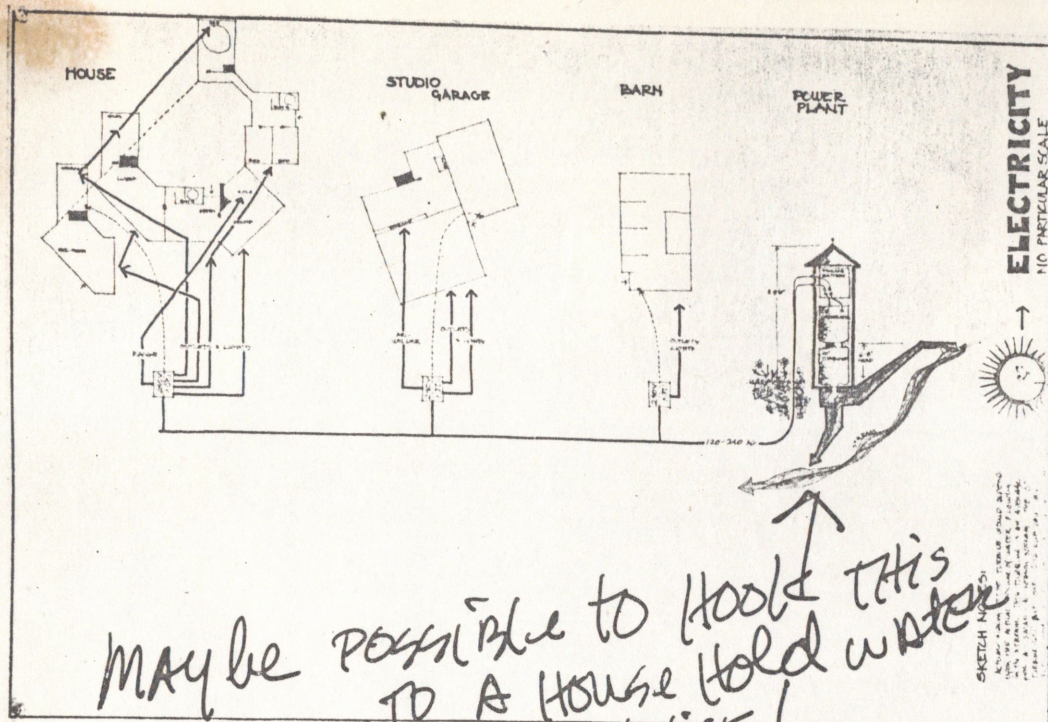
THE PLAN AND SITE

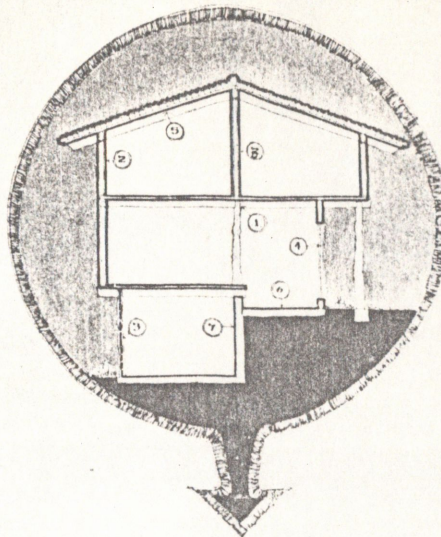


Sketch Notes:
 This map shows the detailed layout of the site. The sun icon indicates the direction of the sun. The scale bar indicates the distance between points.



SPECIFIC in context.
 INDIVIDUAL EXPRESSION.





STRUCTURAL SCHEMATIC

1 PRIMARY STRUCTURE

Must be designed to support the weight of the roof and floors and to resist the forces of wind and seismic activity.



Roofs and floors must be designed to support the weight of the structure and the loads of living and working.

ENVIRONMENTAL SKIN

2 Control the gain and loss of heat and moisture.



Shielding is the exterior finish. Finish the walls to match the interior.

3 Control the gain and loss of light and air.



Control the gain and loss of light and air. Control the gain and loss of light and air.

4 Control the gain and loss of sound.



Control the gain and loss of sound. Control the gain and loss of sound.

5 Control the gain and loss of heat and moisture.



Control the gain and loss of heat and moisture. Control the gain and loss of heat and moisture.

6 FOUNDATIONS AND GRADE FLOORS

Control the gain and loss of heat and moisture.



Control the gain and loss of heat and moisture. Control the gain and loss of heat and moisture.

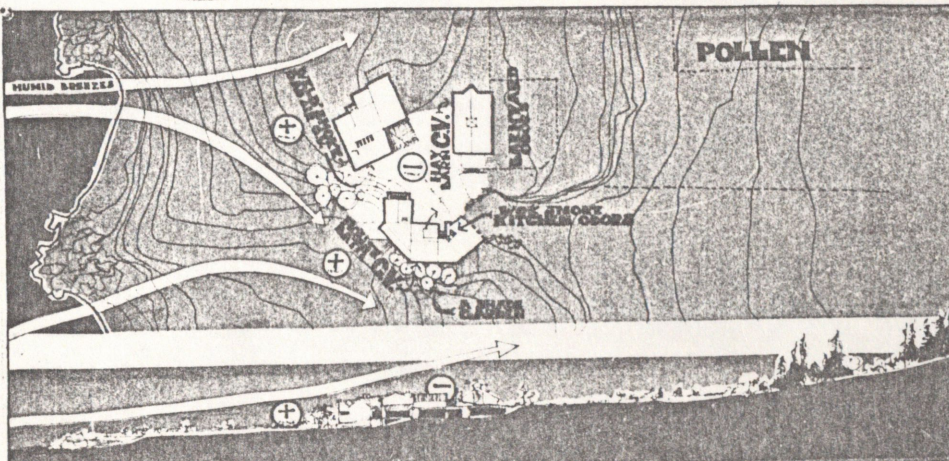
7 Control the gain and loss of heat and moisture.



Control the gain and loss of heat and moisture. Control the gain and loss of heat and moisture.

CONSTRUCTION STRUCTURE

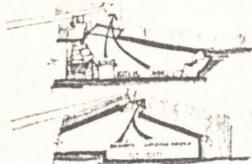
SKETCH NOTES



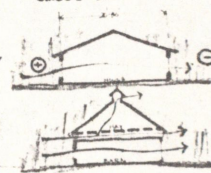
VENTILATION COOLING



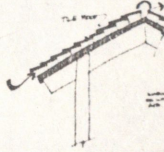
VENTILATION CONVECTION UPDRAFTS



CROSS VENTILATION

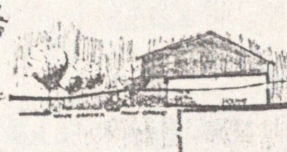


COOLING AIR MOVEMENT

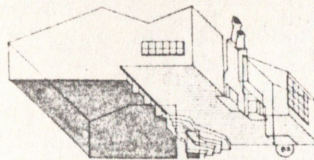


SHADE

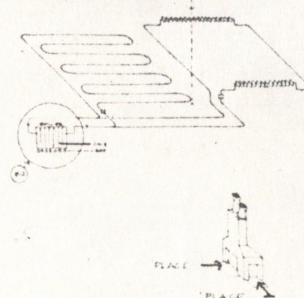
EVAPORATION



SKETCH NOTES: The house is designed to be a passive solar house. The house is designed to be a passive solar house. The house is designed to be a passive solar house.



STUDIO SHOP **ZONE 1** | **GALLERY DRAWING BATH** **ZONE 2**



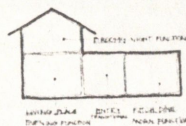
SKETCH NOTES:

HEATING SOLAR



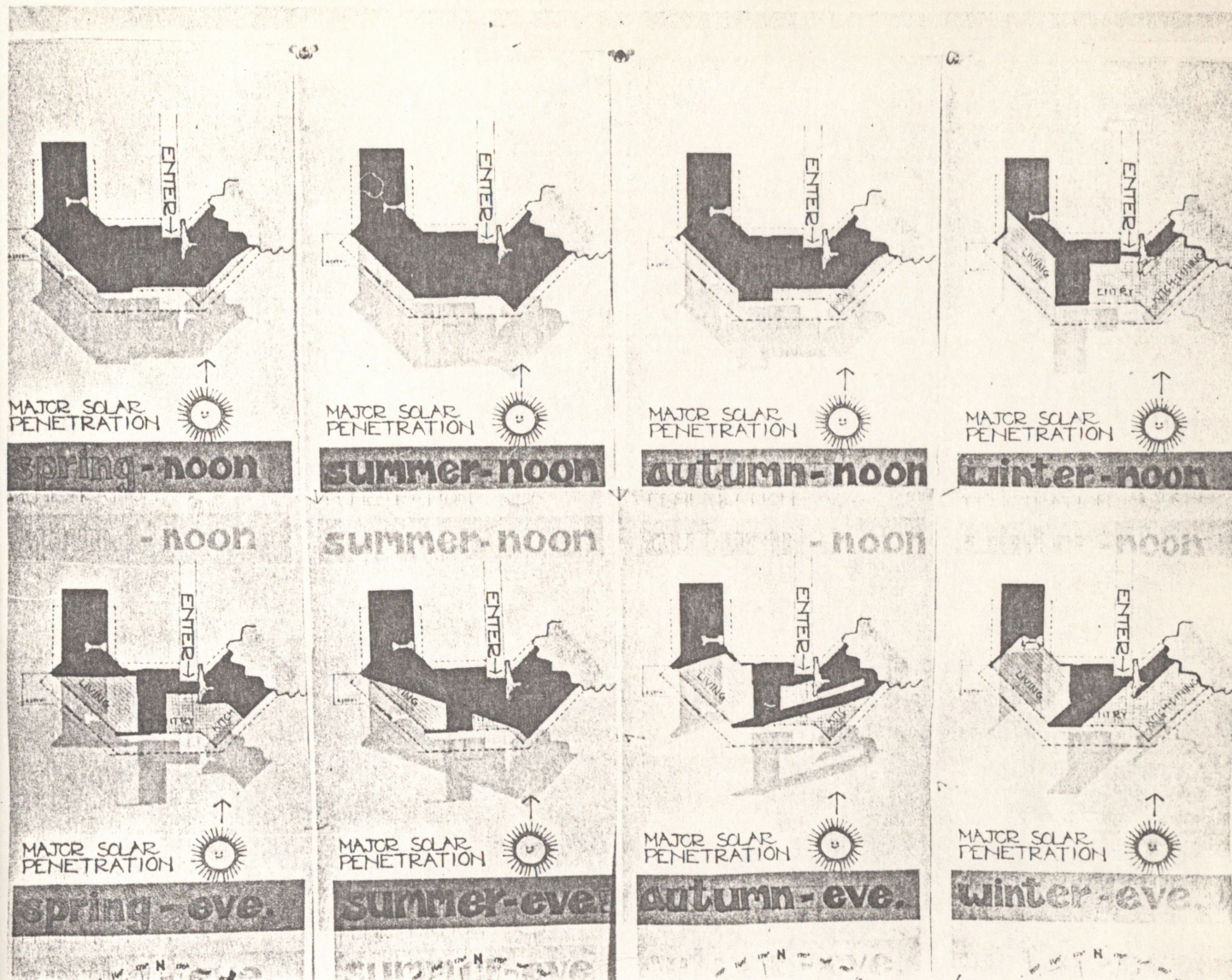
BY NATURAL CONVECTION
AND SOLAR RADIATION
THRU GLASS ONTO DARK
SURFACE MASSES.
DIAGRAMMATICAL DATA
PERTAINS TO WINTER SEASON.

KEY:



MOST
MORE
LESS
LEAST

REPLY TO NOTE 4



Theory is to let the sun in when you may need it. (winter) and shield it when you don't want it. must shield in DRAFT outside -

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~~720.6~~
~~M76~~
~~H742~~

~~LIB. USE ONLY~~

