A GENERIC HOUSING

BY GARY DIAMOND

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A GENERIC HOUSING DESIGN

by

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as a partial fulfillment of requirements
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ACKNOWLEDGEMENT

To my parents, who have helped me through these difficult years.

INTRODUCTION: DEVELOPMENT OF PHILOSOPHY

The reasarch and design I have done to this point, has served to develop a series of related ideas, a philosophy which, when enumerated and used as form determinants, will be the foundation for my work as it progresses toward a finished project.

Each man is unique, but there is a common Humanity; the Architect's priority is to the freedom of the many.

The multi-use gesture implies that any built aspect of form must be a solution to the total problem; must in a stroke solve many apparently varied concerns, and thus do this most efficiently.

Economy and Ecology are keynotes of this process. Prefabrication, Homeostasis, and Equilibrium are the means to these ends.

The blending of the Urban image with the Pastoral image will make an Environment in which Man truly belongs; a balanced life with no need for escape.

Architecture must become more Nature-oriented in many ways, for the creative reconstruction of Ecology, natural and Human.

When Corbu said in 1944, "The conquests of Man over a relentless and indifferent Nature," he was stating a proper attitude for industrial times. But now, in post-industrial times, Nature itself may be seen as a model for Man's action. It is neither indifferent nor relentless, but "the creative and regulative physical power which is conceived of as operating in the material world as the immediate cause of all its phenomena."

Taking a long look down the road, in the development of a matrix for the shape of things to come, the concentration of all basic activities into more precisely designed spaces will be an emphasis.

I will not be involved in simplified geometric form, or the building seen as an abstraction, but rather in a complexity of response the building may provide to the varied requirements social and physical, etc.

The belief that a discipline is destroyed by studying only the parts, is intellectual fragmentation, and an overall view is needed in any judgement.

Building is not an absolute object in space, not painting, not sculpture, but a changing phenomena, in its unitary comprehensive nature, approaching art that is science.

When there is social change, you must expect that there will be a change in Architectural expression.

Loss is more, beauty in brevity; a sort of Architectural Haiku will motivate my work.

The variety of interests between users of different ages and education should be taken advantage of in the rich collision of experiences.

The belief then, that each kind of experience does not need a physically separate environment to develop in.

Personal identification to the immediate group may replace our detached living style, as the Pueblo was the identy of the tribe.

Aesthetic criteria are modified by social attitudes, economic implications, cultural

precedents, and symbolic allusions; witness the beauty of a 1956 Nomad, with its shark fins, chrome jewelry, and image.

We will see a time when attitudes and necessities will overtake the status-quo, and the time when dependence on technology will be overcome by energy-use for life support. When the commitment to the large mechanical plant will subside in favor of labor-intensive assembly and the decentralization of major services.

The Planner must have courage to interpret his own vision, daring to make assumptions contrary to the wisdom of his peers and the past.

The approach of the Utopians, who establish goals, then work backward from them to the present, charts the future course of day by day decisions.

The environment is made of a multitude of structures, (organization, complex, arrangement) of light, of air, services, movement, psychic, location, identity, privacy.

A formal philosophy might be called Neo-Functionalism and be described as: making value judgements as to question,is the function worthwhile? Is it compatible with other basic Human functions; and what are its consequences?

In a time of crude physical restraints, scarcity and diminishing resources, the control of technology, and more communal ways of life, and a simpler standard of living might result.

Not stylistics, not heroics, but a blank page for individual human expression; not a theatrical creation of spaces for individual types of use; not the Architect's expression.

What is a cave, functional, until it is Lascaux. An infrastructure for expression. The structure is tight and unmoving in response to economy and energy concerns, but has modes of operation in response to climate.

Hardening of the categories has produced a design process and a building solution in which the various systems have been non-integrated. Function, structure, mechanical, controls, natural controls; the design process and the building process, which together make Architecture proceed in a piecemeal fashion, as individual loci. A framework of interaction among the various controls of many systems, makes for an Architecture which works synchronously in all its aspects.

Pre-planned for flexibility with amenities as a catalyst. Perhaps such a solution is not for everyone; there are enough people and enough different needs to welcome something new which has not been tried until now.

We don't need the same regimented controls as to what housing can be. We need choice beyond the status-quo.

The energy-crunch is a unifying force which will bring people together physically, socially, psychologically, and culturally. Decentralization of non-energy consumptive or locally efficient units.

A continual possibility of conversation between the parts able to re-adjust themselves into a new equilibrium in the environment.

A building system with a diversity of modes of operation that it seems literally alive.

Integrated human activities for a more dynamic space for use.

Building with respiratory, circulatory, and vascular systems interrelated. Inhabited space transcends geometrical space.

The house acquires the physical and moral energy of the human body.

The tyranny of nature's limited resources creates the responsibility for a symbiotic relationship with the environment. This creates the need for a simplified version of the modern house, more humble in its stature, especially in individual amenity; more frugal in its application of self-conscious desires, and mindful of the minimum needs of life.

Architecture insulates us from the environment, and exposes us to civilization.

The remainder of this project will work toward a solution for housing as settlement, and seeing environment as a continuum of accretive growth in which the form evolves naturally to greater density without destruction of earlier built environment.

A settlement provides for survival needs, man's gregarious nature, water, food, fuel; using materials available, it facilitates social arrangements, memorializes myths, is a repository of culture and its symbol. Politics, economics, custom, habits, aesthetics, climate, geography, physical requirements, resources, and technology, all mold the product.

The belief that some restraint in economic expansion will help to limit alienation, non-cooperation, and frustration, for removal of man from the social context provides for anti-social behavior.

Planning is an exercise in a non-deterministic view of History.

NOTES: CONCEPTUAL FOUNDATIONS

EQUIPOTENTIAL SPACE: SEVERINO

- Each man is unique, but there is a common humanity.
- Freedom of expression and the right to shape own environment
- A synthesis of service and expression
- Security and solidity of the past plus changing needs of the moment
- Quality vs. quantity, international standard, rich and poor
- Continuity, flexibility, articulation
- Frame components, function objects
- Throw away appliance, rapid substitution
- Options - Freedom - Spherical F.D.'s
- 8' - 50 17' - 500 35' - 10,000
- The Assembly Line
- Building to ground interface
- Self help and unskilled labor is bad
- All building equipment must be imported: trufks to nails
- Component industries - Specialization - Sub-Assembly - Final Assembly
- Limit in weight - shipping

- Industrial framework design factors:

  . Choice of materials
  . Efficiency in production methods
  . Transportation of sub-assemblies
  . Durability and maintenance
  . Storage and distribution

- High strength to weight ratio

  Fabrication and transportation costs

  Increase with weight

- Increase Efficiency - Multiple use of each material

- Surface skin is environmental protection and structural membrane

- Urethane core is insulation, binder, gluing agent and shear core

- New Materials, air-space-undersea. Get into commercial structures

- Ducts are functional and also are stiffners

- Physical deterioration begins in the connection points, especially where different materials meet

- Periodic replacement of joint protecting materials

- A joint system of rapid and simple replacement

- Laws on international transportation

- Minimum allowances for tolerances: horizontal and vertical, controlled especially in large projects error is multiplied

- Price per pound Lightness, minimal cost, resistance to variable range of loading condition Stackability

- New Approaches: Technical Aspects

Structure	Weather
Protection of Materials	Thermal insulation
Fireproofing	Acoustical insulation & Sound adsorbtion
Galvanic current & Lightning protection	Electircal, Mechanical, & Hydraulic installations

- In Multistory: Extra Reinforcing welded plate or angle sections

- Advantage over linear or single plan members, need bracing until adjoining members in place

- Caissons for foundations Hollow shells, telescoping device; footings to incorporate main pipe outlets and inspections openings

- Corrosion protection

- Non flammable - expanded asbestos

- Heat bridges must be avoided

- Neoprene gaskets and adhesive tape - Brise-soleil - use in any climate placement rather than fibre glass matting - too expensive

- Sound absorptive

- Mechanical electrical and hydraulic - are the primary elements to which the prefabrication concept is applied

- Avoid on-site junctions and attachments

- All panels receive same ducting

- Industrialization - in construction technology and systems

- Hardware - physical construction units Software - production and decision making processes

- Engineering systems vs. a function between man's will and the control and direction of production processes

- Available technology and aspirations

- Physical Solutions will change constantly; adaptable to culture, society and technological variety.

- A house is thus fast food, or a fad, impoverishment

- Will and ability - by selecting from components and arranging in orders

- Self awareness, education, self govern:

  Subsystem components F.O. & F.C.
  Primary pattern level - a geometric organization of a single dwelling unit
  Secondary small grouping - the neighborhood
  Tertiary - geometric relationships between neighborhoods

- New Dimension of Freedom

  "The capacity continuously to modulate any space" hit the road or turn the dial

- Immediate response to spatial need

- Realistic schedule for production and marketing: 5-10 years

- Personal choice will be expressed in the spatial solution - need to decorate will disappear

- Apartment buildings look the same all over the world

- Quality and light, volume tension

- Five persons - three bedrooms

- Per capita space 200-240 exclusive of external corridors and central facilities

- Flexibility - adaptation of space - a function of mobility and transportability - achieved through reduction in weight.

- Massive and heavy structures are senseless

- Concentrate all the basic activities into fewer precisely designed spaces

- Sculptural quality makes decoration unnecessary

- Choice is "Kitchen, bathroom, and utility rooms can be placed in various ways on the facades, while Bedroom F.O.s can be moved in the internal space

- Bedroom F.O. is just a bed with shelves and walls associated with it for privacy

- How to find an appropriate matrix - the shape of things to come

- Does architecture reveal what is or hide it and present altruism

- Or is architecture a vanguard of what might be

- Criteria for planning a system:

  . A geometry which allows for interchangability of components
  . Technology to be employed
  . The interior volume resulting from the possible combinations
  . Aggregation at urban scale - adaptable to topography for macrosolution

- Geometry - a number of components to permit several unique aggregations

- For production and utilization - a limited A number as possible

-Technology - must permit a variety of solutions without adding to the total cost due to excessive adaptability and sophistication

- Interior and Exterior space - each great potential as adaptable environment

- Basic patterns are of three types:

  . Horizontal . Inclined or terraced . Vertical

- Horizontal - May rest on ground or detached by a bearing macrostructure - Inhabitants could live on ground - total exposure to sun and sky. Like the Mediterranean. Also has privacy and efficiency. No vertical links; it allows a successful communal life. Limited view possibilities.

- Terraced - Directly on hilly terrain; inexpensive when it redeems steep unusable terrain. Privacy and view

- Most commonly used is vertical

- Transport one set of F.O.s from one site to another

- F.O. for 5 onto a truck 50' long - clothes, utensils and domestic necessities, small furniture, stored within F.O.s

- Panels connected at joints

- Infill panels doors, windows, cupboards, small parts - easy transport - open system

- Disadvantage in large number of on site operations in connecting joints, rigidity and weather-proofing

- 24' x 24' x 2 - 1152'

- Allotment of play space

- F.O. concent. on upper floor - free lower area large

- M.B. 11' - 8" x 8' B.R. 8' x 8' K. 8' x 5'-6"

- If F.O. area is increased ration is noteable but ratio of free volume and F.O. volume is barely affected

- Mobility time - Mobility cost

- "Mechanism to move and lift F.O."

- Moves freely or incorp. to fixed structure

- F.O.'s dismantled for combinations

- Is mobility at onset only or
- Structural frame components
- Mechanical frame components
- Struct. and Mech. Auton. - M.F.C. F.O. and window
- Elevator built into wall
- Supportive functions are just that - do not need to exercise freedom in of themselves.
- Either to save urban space
- Mech. frame must be designed in accordance with the shapes of F.O.'s - Chicken or egg
- The Hallway - who needs it in the private sector
- Cantilevered utility outlets
- Closet space takes floor and is part of heating envelope
- Remove it from Don't heat if use as buffer
- Personal and shared needs, dynamic geometry
- Freedom and individual participation
- Tech. + Art - common ground is participatory democracy - not the dogmatic application of a technocratic order
- Urban image vs. pastoral image
- Hive city - Eff. Prod., Action, highly communal and social, needs macrostruct.
- Tree City - Max exp. to light and air - detached from ground - nature in concert with it. Leisure

- Blandness vs. total spectrum of needs highly particularized solutions, to needs at all levels

- A mix of high and low density - Man and nature, science and art, fact and fantasy - Then the differences among men will be the individual choices of mix., not in the differences.

- A new definition of form based on continuity of pattern and growth of pattern rather than a singular expression or a constricted pattern - sculpture

- Territorial codification and new urban-design methodology are needed.

ARCHITECTURE AND ENERGY - STEIN

- Work procedures of unions institute redundancies
- The degree of prefabrication subject to contracts
- Structure of building industry tends to resist change
- Architecture is longest lived of human artifacts
- Infrastructure, streets and utilities, hundreds of years
- More efficient energy utilization
- Materials and morphology, light interconnected with weather and climate building
- Programatic demands
- Regional climate, local microclimate, site characters
- Diversity of influences
- Sun, wind, rain, snow
- Simplified geometric form, building as abstraction
- The sealed building
- Aluminum takes five times the energy to produce as does steel
- Natural vs. synthetic
- Walls, roof, fireplaces, foundations lose heat
- T.V., freezers, washing machines, drier, dishwasher, tape recorders, Hi-Fi.
- Density up to a point, better efficiency
- Higher per-capita energy consumption lower quality of life
- Water systems, sewage systems, electricity, food delivery, transportation
- Laws, practices, regulations, industries, products, real estate values, building agreements, propoganda, all validate the status-quo.
- Throw-away aesthetic, out-of-style mobile homes

- Psychological grouping by individuals to preserve uniqueness while the world homogenizes itself

- Efficiency, propriety, desirability

- Opening windows - Venturi effect

- Attitude - Requirements health

- On growth and form - D'arcy Wenthworth Thompson

- Building vascular systems

- Complexity within order - variety

- Bolted, precast, insulated concrete panels, operable windows, fixed glass, plant box windows, doors, panels are both finished exterior and interior surfaces

- Concrete is crudely placed to eliminate the complexity of formwork and steel placement due to varying load.

- Response in cross-section

- Plastics and synthetics - U.V. light and passage of time

- Capturing rain; waste, pumping

- Amplify each mechanism

- Heating, plumbing and ventilation have become separated from each other

- Storm drainage

- Heat from lights, motors, refrigeration, waste heat from pipes, cooking, sun, occupants

- Total energy

- Shading

- Interrelationship of systems

- Discipline is destroyed by studying only the parts

- Task lighting, light differential

- Levels of change

- Cast iron kitchen range

- Odors, ceiling fans
- Buildings respire
- Chimney affect of stair shaft
- Drinking, washing, flushing
- Japan, plastic water bag, heater
- Vegetation, runoff
- Circularity, ecologically sound
- Methanol
- Interrelated controls
- Configuration, orientation, placement
- Performance of skin
- Thermal shutters
- Slab on grade, insulation, and perimeter
- Vertical collectors, direct and diffuse
- Modularity unifying and disciplining
- Symmetry and geometric formalism - B
- Building reaches out and withdraws
- 90% of sweets products are unnecessary
- Rolladen, exterior roll down bl
- High Performance - Refinement
  Bicycle - the basic frame - then adjustments for individual performance and form
- Scaffolding more noteworthy than building - crane booms, valley irrigator
- After W.W. II, we could transcend the discipline, rigor, and spareness of early modernists - wrong
- Clarity and efficiency lost; also loss of style

- Lack of constraints, building with care, precision and economy

- Building not absolute object in space as such ; it is painting and sculpture

- It is environmental and social

- Technical, cultural, climatic principles

- Solar heat accumulation - roofed and paned

- Cure is not at same scale of intervention into the natural system as the malady - particulate boiler chimney

- Aesthetic criteria modified by social attitudes, economic implications, cultural precedents, symbolic allusions,

- Palladio and Alberti - proportion

- Medieval - serial spaces, hierarchy, detail distance and near, non-axial principles

- Walking time perception

- One room in width allows greatest choice in response to weather differences, thermal lag, x-ventilation

- Time component, alternate space uses, dynamic relationships

- Scale - aesthetics - rationality and fragility of ecosystem

- In colder areas reflective glass - No

- Attitudes and necessities vs. status quo

- Dependence on technology vs. energy use for life support

- Size of building and kind of openings

- Large scale application of smaller scale units - piece by piece

- The commitment to the large mechanical plant in buildings puts more of the building dollar into energy - intensive manufacturing rather than labor - intensive assembly

- Building materials supply, construction industry, subcontractor set-up

- Natural architecture - natural universe

THE DOUBLE E - GOODMAN

- Planner must have courage to interpret his own vision, daring to make assumptions contrary to the wisdom of his peers and the past.
- Mutation rather than evolution
- A world seen as a fragile network of interlocking, interdependent systems, in imminent danger of over-burden and disruption
- Economy and ecology, not science and technology
- Ecology - knowledge of house economy - Management of house
- Mutual relations between organism and environment, management of expenditures
- Built environment - Crystallization of technical, social, moral, way of life, revered, admired, loved, paid no heed
- Climate, geography, history, collective work
- Impersonal, abstract, and elegant
- Museum of architectural curiosities under the earth, sea, man-made islands, domes under antarctic, moon, megastructures, plug-in
- Not new technologies or inventions
- Useless gadgetry, revaluate technology
- Living within our means - The ease, beauty, wholeness of life.
- The effects of sexual symmetry on the dwelling unit
- Nature's symbiotic ways
- Users - Modesty, frugality, physical environment designed for people, not things.
- Humankind in its symbiotic relationship with nature
- City form is a creature of technology.
- Production stood revealed - means to ends
- Self-sufficiency - autonomy
- Face-to-face relationships, social intelligence, cooperative activity, natural division of labor, spontaneity, closeness to nature

- Cities- outmoded machine

- A simple community, a more natural place

- Disaster - Sprawl and spread garbage, artificial cravings

- Communal production and use-economy

- Size rational relation to function - Single family dwelling - economically and ecologically costly

- Cities - dimishing returns

- Height limited by stair climbing ability - Mesa Verde approach

- Windows for light

- Small and tight knit

- Sun for winter heating, breeze for summer cooling

- "We don't know enough to build a town for the postindustrial society."

- Repatterning of our existing built environment

- Green belts

- Foods in season

- Skyscrapers may become mines

- History moves in helix, no change in plan view, but new levels

- Not villa contemporaine - Cartesian logic - or broadacre city - sprawl - but somewhere in between

- Form results from the way in which it functions as environment for social and economic life.

- Economic expansion vs. restraint

- Non-cooperation, frustration,alienation

- Household - unit of consumption instead of production

- A natural community - limited size, geographical proximity, common interests, way of life conditioned by traditions, tools, and environment.

- Communities are vulnerable, square-rigger destroyed Polynesia, a rifle the Eskimo.

- Religious convictions of justification and vocation

- Science preferred to wisdom, utility to beauty, rationalism, capitalism, scientism - Renaissance

- Prudence, frugality, self-sacrifice

- Humanize the metropolis by creating within its network of mechanical organization the urban equivalent of small country communities - BNWR

- Weakening of nuclear family

- Settlements - located and arranged - survival needs - gregarious nature, water, food, fuel, building material. elements, outsider, social arrangements, memorialize myths, repository of culture, its symbol, politics, economics, custom, habits, aesthetics, climate, geography, physical resources, technology. All mold the product.

- Architecture insulates us from the weather and exposes us to civilization - G.D.

- Byzantinism grows

- Birth of a new style fit for the new time

- Ordering the changes by examining options

- Technology breeds technology - industry devoted to making anti-pollution devices

- Uses least fuel, least pollution/BTU

- Durability, repairability, transparency, clarity of design

- Equilibrium with its environment - homeostasis - passive controls

- Restricting size and extent. Giantism is straining the biological fact.

- Proportion between means and ends

- Ethics and aesthetics

- Neo-functionalism - is the function worthwhile, compatible with other basic human functions - consequences, electric carving knife.

- Addicted to BTU's, Polluter

- The very universe is reflected in techniques "The conquests of man over a relentless and indifferent nature." Corbu 1944

- But not reflected in our gadgetry

- But nature is neither indifferent or relentless, but the "creative and regulative physical power which is conceived of as operating in the material world as the immediate cause of all its phenomena."

- 1933 CIAM - town planning based on segregation of social and private working, living, and entertainment - Specialization violating symbiosis, abusing unity.

- Bland, tidy, antiseptic, orderly. No wonder violence is popular.

- Products - some given up, some given a minor place, redesigned, some from a simpler time

- Energy - labor - work intensive - creativity, skill, energy - atelier

- "The representatives of a given order will label Utopian, conceptions of existence which, from their point of view, can in principle, never be realized."

- The Utopian element in any thought will almost invariably generate an adverse reaction in the conventional mind, for there is in it a certain something so opposite to current wisdom that, regardless of merit, it will be called impractical, unlikely. The truth is that every Utopian idea has a heretical stink quickly detected by the orthodox.

- Wit to recognize the implications of a Utopian proposal

- The test of his influence is how acutely he views the problem and how suitable and timely a solution he finds.

- Our physical being will not change. The mutation must take place in our minds, economics, politics, sociology, ethical behavior recast to suit a culture man has only dreamed of.

- Prudence dictates thoughtful appraisals, theoretical discussion, pilot studies, rather than commitments.

- The planning is interim, the efficiency of immediate utility is the criterion.

- Indisputably human need, replace unaesthetic, unhealthy, or obsolete use. Reclaim or protect a natural resource, historical landmark, ecologically sound

- Reason - prejudice - fact - crucial detail - trifle - new and merely novel

- Utopians who establishes goals, then work backward from them to the present; this charts the future course of day by day decisions.

- Crude physical restraints, scarcity, diminishing resources - control or technology, communal way of life, sexual equality, simpler standard of living, decentralization of work and politics

- Utopian - no place

- Eutopian - good place

- Planning - exercise in nondeterministic conception of history,

- In so far as it makes for the survival of one's descendants and near relations, altruistic behavior is a kind of Darwinian fitness, and may be expected to spread as a result of natural selection (Haldane 1932)

- Without excess, implications, unlikely as well as foreseeable, by-products, side effects, sought-for symbiotic relationships between natural and man-contrived.

- Relate spaces and structures so their arrangement facilitates a convivial rapport between domestic life and work, education and leisure, privacy and community, expressing through their forms an aesthetic vision which makes sense of it all.

- Subsistence minimum

- Design no object which doesn't give pleasure in the making, make no object which doesn't give pleasure in the using - Wm. Morris

- Machine style - pure function is sought, proof of its finding is in miniaturization, or ephemeralization of the object - stone ax - laser beam - spectacles to contact lens

- Pure utility - bridges, dams, airplanes

- Hand - style - personal - sculpture

- Intermediate - chair

- Human welfare is placed before technical efficiency, what benefits the majority has priority. Means and ends are inseparable.

- Home and workshop - same building, pride of place

- Local plants are more efficient

- Sludge as fertilizer, waste heat for farms and hothouses, fish ponds, windmills, waterwheels, solar collectors, garbage

- Open plan - "Wholeness, empathy, depth of awareness - revulsion against imposed patterns.." McClehan

- Chateaux and manor houses, lacking in all privacy; rooms used as passages, spaces interchangeable.

- Human Scale

- Building in harmony with their environment

- Stair climbing ability

- Ancient means - sun and shade, breeze, protection against the gale.

- Mechanical ventilation and air conditioning - only for special situations - Submarines, laboratories.

- Convenience and delight merge

- Accretion - solves modular problem of p city

- Improvisation and invention

- Squares and Plazas - 50 person/acre

- Two streets - plan and pedestrian, vehicular

- The private room - communal toilet and bath

- Geophysical populism - political differences, economic and cultural variation

- Nothing is too wonderful if it is consistent with the laws of nature (Faraday)

- Hearth is primordial heart of home

- Japanese house - mat and bedroll, exposed construction, undecorated surfaces, minimum materials.

- There is some of the same fitness in a man's building his own house that there is in a bird building his own nest (H.O.D.)

- Car - very image and symbol of the wasteful ways we cherish - becoming in many ways the decision-maker in design

- Eliminate intermediary services

= A revolution on our living habits

- Close knit plans of small towns

- Eliminate causes;not treat defects

- Pollution a by-product of living itself

- Bathing and excretion - previously separate

- Hygiene 10% sanitation; 90% aesthetics (GBS)

- Roman baths - gathering place
- Privy

- Private bathroom - not improved survival tool. It destroyed civilized socializing

- Rip the door off the bathroom

- Bulldozing - Quadrilateral - hippodamus

- Health, welfare, safety, care, feeding and preservation of natural resources

Gathering together the sprawl and breaking up vast congestions into more workable units

- "Surely then, the bankers and brokers and their theoreticians are wrong when they say, 'The controlling factor in determining land use is economic rent.'"

- Brick or block fireproof wall - not change

- Elevator, high speed ventilation, lighting

- Not the housing, it's the environs that need the work - more than sanitary and convenience - Pruitt - Egoe

- 700 sq. ft. - 650 1890 Brooklyn

- Mobile home - 300 - on the Gallatin

- 720 1960 - vs Hong Kong

- 519 Vienna 1920

- Recycling

HOUSING - MACSAI

- Even number of apartments on a typical floor conducive to orderly exterior rhythm
- Pairing apartments - various economies
- Building program, location data, zoning, building code, budget
- Amenities
- Space adaptable to variety of lifestyles
- Maximum privacy, movement to any room possible without crossing another
- Inclement weather entry - storage
- Kitchen - entry direct, not through living space
- Children to bathroom or bedroom without crossing living space
- Delivery man not in living space
- Bedroom to bathroom, not across living space or seen at all
- Kitchen to bathroom - not through living space
- Kitchen to dining - direct, possibly crossing entry hall
- Rooms around the core of apartment which consists of entry hall and bedroom corridor
- Living zone - sleeping zone, separated by entry hall
- Functional compromise to achieve economy
- Daylight and fresh air - each room
- Bathrooms, kitchens, dining rooms, sometimes handled as interior spaces
- Interior spaces possible because of mechanical ventilation
- Borrow light from adjancents
- Minimum dimensions cannot be accepted without scrutiny
- Balconies - aesthetic - symbolic extension of living space - extra storage - plants, cut-off daylight, dirt-catchers only part of year
- Shallow pantries

- Food preparation - cooking should be screened from living space

- Refrigerator - sink - stove - dining-sequence

- Bedroom - beds - dresser, chair, crib

- Living room - couch, easy chairs, desk, desk chair, T.V., table

- Counter tops - kitchen

- Entry hall doubles as dining

- Closets - guest utility - pantry - linen - bedroom - storage

- Bedroom closet - walk-in dressing

- In efficiencies - 80-85% of gross is living space - the rest is circ., walls, colums, shafts.

- Smallest possible circ. space is most efficient.

- In rental space - from interior Face of ext. wall to center line of corridor partition

- Wheel chair - 2'8" door

- Partitions - noise transmission - fire.

- Airborne and impact noise

- Mass or density is best control

- Sound attenuating blankets

- Privacy equally available to all

- Critical areas - walls meet floors and ceilings

- Caulking beads

- Piercing of walls for pipes and electrical outlets is area of sound transmission danger

- Grilles of common exhaust ducts, and medicine cabinets - solution - sound baffles and surface mounting

- Slip joints between partitions and slabs in concrete will reduce racking effects.

- Impact noise - cushioning carpet

- Poor STC performance in multi-layered structures with joints. Best reliability with concrete slabs.

- Fire - safety - stairs

- Chimney effect

- Compartmentqlization, protection of vertical shafts

- Smoke spread, stack effect, interfloor leakage

- Over-pressurization of public corridors - is solution

- Smoke-proof tower

- Balconies offer protection

- Walls and floors of fire-proof

- Siamise connections, standpipes.

- Sensors - voice communication

- Emergency - power supply

- Flame - barriers on exterior

- Access - fire lanes - collapsible ballaros, turning radii

- Single stair adds security - Lowrises

- Maximum travel distance 75-100' from apartment door to fire stair

- 50' maximum from entry door to furthest interior point

- Dead-end corridors - none - 50% of maximum travel distance 20-35'.

- Exit width - 3', 3'-8"

- Winders in fire stairs prohibited

- Minimum # of rises between landings is 3. Maximum vert. distance between landings is 12'-0".

- Maximum riser is 7¾" or 8". Minimum tread is 9" with '" nosing. Minimum headroom is 7'0"

- Exterior stairs

- Scissors stairs - like double helix

- Enclosed horizontal transfer passage

- Core elements - stairs - elevators - refuse chute - boiler stack, electric meter, transformer room, air supply duct
- Parking: Dwelling to car ratio
- Surfacing - drainage bumpers, safe-lighting - trees.
- Recreation space adjacent parking
- 90% parking most economy
- 150' from dwelling maximum - visitor - 200'
- 300' adequate for open - on grade
- Open-sided garage more economical
- Tenant walk to refuse 100'-150' maximum
- Lobby is security checkpoint
- Lobby facing street increases security
- Less than 8,000 must go to precast
- Less than 7 stories no lateral load resistance
- Bracing, shear walls, moment connections
- Concrete flat plate - 8'5" - floor to floor
- Steel frame needs 9'6" floor to floor
- Columns in rigid grid or scattered
- Short span 15'-16'
- Use structural steel or lightweight concrete if column transfers
- Flat plate most commonly used
- Columns 15' face-to-face; 5" slab
- Span in feet ÷ 3 gives slab thickness
- Shafts located midspan
- Rigid, semi-rigid, scattered column pattern
- Transition column - expansion joints

- Precasting

- Testing of welded connections

- Foundation - soil bearing capacity

- Building height - column spacing superstructure weight - water table level, utilities - adjacent structures

- Spread footings

- Mat foundation - deep foundations

- Lowest temperature likely to occur

- Put on a sweater against chill

- Fireplace heat

- Moisture in air

- Ventilation - window, louvres

- Treating make-up air, heat or cool

- Charcoal filters

- Low humidity effect on materials

- High humidity rot - 40% ideal

- Equipment near center of building

- Fenestration, orientation, insulation, reflective surfaces, overhangs

- 2, 3, 4 pipe system

- Pipe expansion, contraction - U bends

- Pipes, etc. through slab bad

- Infiltration

- Stair doors weather stripped and self-closing, revolving, lobby door

- Exhaust ventilation

- Water quality, pressure, heating, hot water circulation and protection piping, erosion, corrosion, back siphonage, waste disposal, building drainage, plumbing fixtures, toilets, lavatory, bathtub, shower, kitchen sink, location fire protection, hoses, sprinklers, fire pumps, stand pipes, siamese fire extinguishers, space requirements

- Total energy plants
- Purchased electricity - provisions
- Distribution and service
- "Electricity distribution shows much of the treelike pattern already alluded to in water distribution" (Macsai)
- Emergency light and power
- Auxilllary systems

  Safety - fire alarm

  Security - door signal

  Communication - phone

  Enjoyment - radio and T,V.
- Design methodology
- Plan, structure, mechanical system - exterior form
- Defensible space
- Concrete pouring - 9,000 minimum
- Central corridor system
- Sleeping doesn't need to take place along ext. wall
- Economies in deep buildings, with narrow but deep apts.
- Multicore system
- Point block system
- Exterior corridor system
- Skip-stop system
- Exposed frame - column bays
- Exposed frame - load bearing mullions
- Cladding - curtain wall, masonry
- Balconies
- Volume breaks
- Core-type walk-up; corridor type
- Mortise - 6 typ. floors 87.5 units/acre

BEYOND HABITAT - SAFDIE

- 70-Ton Module

- New forms of housing that would re-create, in a high density environment, the relationships and the amenities of the house and the village.

- A system that could be applied to any site

- A three-dimensional modular building system

- Roof forming roof-garden for another

- North American economics; density is directly related to land value

- The problem then is to develop a plan form in which increased density evolves naturally without the destruction of what has been built in the earlier stage.

- Environment as continuum

- Indian pueblos - clusters, morphological truth in context of material, climate, landscape

- Taxco - unity achieved by cobblestones, whitewash, planter-boxes

- Doesn't take photos because of composition. Interior integrity, not framing edges

- Political idea - Utopian city

- Inclined sloping transparent membranes ... gardens and public parks penetrating ...

- Can we have large scale planning and complex technological processes in the environment without paying the price of stifling individuality, choice, variety, and identity

- "How can you group the dwellings in a rational way from the point of view of the house designs, and at the same time arrive at a grouping that lends itself to the rational analysis of the stresses?"

- Housing modules load-bearing as well as space-enclosing

- No redundant systems - Ex. plug-in

- "Given the use of concrete, it would be a superior system if the units not only enclosed space but were load-bearing as well."

- Boxes, load-bearing; pedestrian streets were beams carrying horizontal and vertical loads, earthquake and wind; elevators and stair towers. Indeterminate structure

- Expansion joints

- Codes are established to set standards but their original intent is often forgotten

- Performance codes - data, not procedures

- "How much daylight a house should have is a less tangible thing ... so minimal that they are not an effective guarantee of environmental quality."

- "Connections are where the money is" - number of crane lifts.

- Point of connection be standard

- Plumbing in vertical shafts - 3'

- Width of seventeen or eighteen feet to accommodate a stair run

- Comprehensive dimentional system coordinating structural and interior components

- Concrete - hardly any tension; it's heavy and porous

- Form largely dictated by relationship of houses and gardens, sunlight, and the desire to express the identity of the individual house within the group.

- Lighter, stronger in tension, watertight surface, moldable

- Bathroom, kitchen, and partitioning systems as pre-manufactured

- Seventy-five% of the house isn't in the shell.

- Corners are always weakest point.

- A building is so much more complex than a car.

- "If habitat went on for five miles it would become intolerable."

- Other scales of order or organization to give hierarchy - location, identity, variety, choice, spatial richness, non-industrialized, handcrafted, vernacular, village.

- Plumbing vent - sovent

- Cooling tower - fountain

- Behavior of air around building

- Plants in two feet of earth die of evaporation.

- Windows shaded with vines

- Performance, logistics, total concept

- Windows facing 3 or 4 ways

- Baseboard ductway independent of walls

- Puerto Rico - eight molds, four types of load-bearing boxes

- Furniture - emotion

- Formulating program - genesis of ideas

- Spiral formation, with mechanical services and circulation penetrating it; houses like a tent enclosing a public space

- "The same architecture which builds the house constructs the door" - Thompson

- Forms or differences of things are simple and few, and the degrees and coordinations of these make all their variety - Bacon

- Infinite variety within repetitive systems central issue of architecture today - Create variation and permutations of dissimilar objects within repetitive systems.

- Gnomonic growth

- Economy and survival are the two key words in nature.

- Form and pattern - needs of survival

- Architecture - Morphology of living organisms

- "It is the imperfection, the gap between the complex life-function of environment and the forms and structures we have made, that creates the duality between the urban, and the organic and natural. This difference between walking in the urban street, in man-made structures and being amongst the trees, rocks, and water has to do with the difference between being in an environment which approaches perfection in its natural response to the demands of function and survival; and the one made by man which is an imperfect solution to equally complex demands. I believe that as the man-made environment approaches the perfection of the form fulfillment of natural organisms, this separation between the man-made and the natural disappear, that we as men will be equally fulfilled in either man-made or natural environments."

- The window should shrink or expand according to the quality of light and the time of day and season. It should move in and out of the wall in response to the sun's penetration and the direction in which we are looking. Its transparency should vary, sometimes allowong all light, or very little, or instantly opaque. Like camera shutter.

- Roof structure straight beams and columns vs. three-dimensional fabric of fanning and folded cantilevering leaf of a palm tree.

- Infinitely more simple yet apparently more complex.

- Environment made up of a multitude of structures

- Structure - organization complex arrangement - structure of light of air, services, movemont, psychic , location, density, privacy

- Stiffness of joints - strength vs. triangulation rigidity, self-stiffening

- Movement of sun - a complex and visually rich arrangement in space

- Fundamental nature of living form - the infinity of structures

- Economy directly related to survival

- Outdoor space, daylight, ability to identify your building, essential to survival. Moral obligation least possible material and labor, satisfies survival. Expands life - spiritual growth

- Psychic structures

- Shape their own personal environment - not the same as everyone else's, because we are not the same. Eliteism. The environment makes demands. can be different as human faces. But noses, texture vary with race, due to climate. We all have skin; it is relatively the same. Skin of building is responding to environment. Personal need for identification or to the immediate group. "The pueblo was the identity of tribe."

- Family territory - Clan

- Differentiate, change, identify environment. Perception of space, learning or working individually. Together - other psychic.

- Logical structures to represent design problems - Alexander - because intuitive not possible.

- Environment a product of evolution

- System of generating principles can be transformed, but convey essentials.

- Generic qualities of a particular environment

- Does rational synthesis of patterns still depend on intuition?
  Pattern is comprehensive program

- Children between 3 and 6 should leave house unattended.

- Family cell, space to live - Outdoor space - sleeping - children own sleep space (North American criteria) Individual adaptation and flexibility. Outer shell - privacy acoustic - privacy visual, the outdoor space - privacy visual windows - orientation - identity - (immediate vicinity) - access - (Daylight, no odors, sit-talk - access children 3-6, 6-10, 10-17 - Adult places to meet - dwelling to car relationships - vehicle vs. pedestrians - public transportation - family relationships (shared entry - court or square - communal identity community - city - mixture.
  Common facilities - the intermediate community on foot or mass transit, cars - natural amenities, treed areas, views, topography

- But cannot document all the requirements

- Can you synthesize patterns without intuition

- Exaggerating one aspect over another

- Environmental characteristics synthesized from generic requirements.

- Contemporary vernacular, many space-makers can be related to each other by an overall structure.

- An expression of our life and technologies
  Man who lives in house is part of design process

- Visual exploration of nature

- Function in its broadest context will include beauty - truth - order.

- Unitary thinking - environment is art

- Mechanical systems vertical shafts

- Expanding concrete - chem stress

- 16' wide module - partitions on module

- Eliminate mechanical subfloor

- 200 units/acre

- Self-stiffening geometrics - ideal module related to tetrahedron or octohedron - extreme efficiency structure.

- Triangulated space structure, which produced rectangular rooms, with never the face of one against another

- Efficiency in utilization of space and distribution of mechanical services a must.

- In multi-story, less material is used when major stresses are carried in tension.

- Vertical cores, contain circulation and services, suspend floors or modules off cantilevered tresses on top

- Storage units, kitchen, bathroom, bult-in furnishings fit well into V-shaped spaces

- Eye level - critical to perception

- The Puerto Rico module, formed houses, created the internal circ., created the system of passages, exterior stairs, pedestrian streets, 40 units/acre no mech. conveyance

- Density = cost of construction, quality of environment

- Social and economic = density = amenity

- The denser the environment, the more complex and costly to provide the same standard.

- "Peoples apparent natural reference for concentration."

- Dispersing concentrations - wheat bricks

- Houses in space - sunlight, view, below this membrane continuous public space protected from elements.

- Micro-climate, part of design of city - sea breezes, veg. north slope diff. Kind on south slope in mountains. Hot climate houses face north and shade each other, create convection currents in shaded areas.

- In cold north, group houses to enclose and shelter public space, packed closely, bubble-like to capture sun and light

- Discipline yet infinite variety

- When there is social change you must expect that there will be a change in architectural expression

- Repetitive - open structural element. A 3-D bent makes a small room, or adds to dome bigger spaces.

-

- Luxury vs. utility - part integ. whole, flexible, adapt.

- Small community and large both amenities

- Optimum density

- Intense urban and open country both

- Build houses from income before tax

- City- States

- Tech. Problem, environment. problem

- Each person is different from every other person. False at some levels. Skin vs. brain vs. nose and hair

- Build adaptability, standard plumbing and electrical circuits, standard structural components

- Variety of internal arrangements

- Generic essence "space maker". It can design itself, own laws of arrangement

- Genetic code of a particular environment Growth and change

- Organically valid

- Combine order and freedom - Freedom without chaos, order without sterility.

- No man's expression can supercede the laws of human nature and environment.

COMMUNITY AND PRIVACY - Alexander and Chermayeff

- Creative reconstruction of our ecology
- Activities social, source in privacy
- Rational, contemplative animal
- Planned ambiance of most abundant life
- Mobility vs. tranquility
- Transition from civilization to post-civilization
- As different from civilization as civilization itself was from pre-civilized society
- Cities a means of achieving simultaneity of association and awareness among men. Technology now preempts this.
- A new manner of approach in the very perception and appraisement of phenomena, social no less than natural is fashioning the world.
- Links between intent, deed, and effect are broken.
- Randomness and organization, disorder and order, alternating to maintain continuity.
- Stereotypes of meaning
- Men live in secondhand worlds
- Between human consciousness and material existence, stand communications and designs, patterns and values.
- New physical urban order
- Fresh look at problem, with defensible basic principle.
- Withdrawal, self-reliance, solitude, quiet, contemplation, concentration.
- New anatomy of urbanism, hierarchies of clearly articulated domains
- Design and build his own ecology
- Functioning environmental system
- Stress of confinement
- Balanced life, without need for escape, ecological equilibrium

- Differentiation in physical pattern

- Indoors and outdoors integrated

- Connection, circulation, communication, comfort, hygiene, using mech. elec. equipment

- "A form that ignores its technical context cannot possibly accommodate the good life successfully."

- Private garden

- Spaces between buildings are as important as buildings themselves

- Completely monotonous environment, explore the less familiar - obscure nook.

- Richness in commonplace

- Acoustic control

- Security

- Physical insulation

- Modesty, conflict of activity

- Interests between different ages and education. Specialization bad.

- Unflinching adaptation of forms to functions.

- Designed environments will be successful only if they respond to the most crucial pressures of our time. Not kitchen paneling.

- Design schools, are by definition scholarly, exploratory, adventurous, philosophically long-term minded. Their interest is the exact opposite of the professional's and their function is to deepen and widen the field as a whole, without exaggerated regard for the immediately practical.

- Research, design, production, distribution, utilization, and elimination.

- Programmatic declarations as well as artistic form makers

- Well-known scientific, social, and technical data outside his field

- Form is ordered expression of need.

- Designer's task is to create order, organize conflicting material and make a form.

- State the problem clearly

- It is not enough for the designer to produce forms with high performance standards. He has a social, technical, and artistic responsibility, and if necessary, he must be prepared for the sake of these to commit himself to principles not previously tested. A commitment of faith is not less valuable for being a personal commitment,or as it is sometimes termed, a prejudice. Presumably, it is the the prejudice of a highly skilled and gifted individual able to sort out the particular aspects of his culture that need to be reflected in form.

- Genuine variety, each kind of experience must be allowed to develop under conditions special, clearly defined, physically separate.

- Without definition and organization, experience becomes chaotic, at best incomplete, and inevitably dull. (B.S.)

- The numberless kinds of experience need to be translated into distinctly articulated and appropriately structured physical zones. In hierarchies of magnitude and quality. At the level of city, yes. Beyond this, no.

- Eating, entertainment, hygiene, and maintenance; family private; paths - urban public; parking garages - Urban semi-public; mail, garbage, utilities - group public; reception, circulation, service, gardens, community, playgrounds, laundries, storage - group private - room of one's own - individual private;

- Sliding screens

- Dwelling an organic part of the larger environments.

- Roughly true, smaller the domain to be controlled, the more controllable it is. Climatic - visual - traffic - sound; the room is the proper unit of control.

- Room - isolated, house - functional Interchange

- 20 dwellings can use crude oil effectively.

- Degrees of autonomy and collectivity for each technical problem, with each inherent potential.

- Public, semi-public and private domains meet around the trash can

- "No conclusions about the relative sizes of domains that are based on technical considerations have any general or permanent validity." Due to obsolence.

- Walled domain, durable - containing mechanical cores requiring periodic replacement.

- Short-term elements separated from long-term ones

- What these obsolete ordinances and by-laws do is to impose quite arbitrary kinds of articulation on the city, so that the appropriate articulation called for by functional hierarchies cannot be introduced.

- "Rules of structure should not be regarded as more than useful working assumptions which become reliable only when one can specify where they fail. But they provide glimpses of the vistas which will be opened by a science of form." They may develop into the axioms of a way of thinking which will reveal the parallels between all realms in which structure is at work.

- Until one stops using popular or generalized words to describe specific objects and events, one will continue to be deceived by the associations with them and will fail to arrive at the essential functional aspect of things and places.

- Sheltering envelope enclosing membrane, transit air, permit light to pass, modulate light, screen light, diffuse light, prevent glare, deal with living organisms, control radiation, temperature, sound, artificial illumination surprises.

- Linked vs. independent issues

- Link is only functional, not habit or vocabulary

- Parts chosen to consider, cut across the structure of the problem, result will be ineffectual. Problem must be split apart to find parts to be considered as isolated units.

- Identify cleavages

- Separation, insulation, access, controlled transfer

- Each indoor realm must have its outdoor space

- Acoustic hierarchy, sun, air, light; smallest sounds can be heard in outdoor room.

- Concentration, contemplation, self-reliance, age, sex, interest.

- Bedroom - solitude, rest, sleep, love

- "More readily achieved if some of the commonplace facilities now found in the bedroom were removed: storage for personal possessions, washing, dressing, undressing, primping, et. al. Buffer zone can accommodate these.

- Voluntary communality vs. inescapable togetherness.

- Separation can be complemented by a combined work-and-ritual room, the hearth, a natural mixing valve.

- Service core - food processing, conservation machinery, climatic controls mechanisms, plumbing, T.V., radio, telephone, Hi-Fi - film and slide projection.

- "It is intended here that the lock eventually become as important as any other zone of activity."

- "A great deal has been sacrificed for economy. Parents' bedroom has been isolated as much as possible but shared bathroom negates the good arrangement. Traditional values chris.

- "The duplication of facilities (Bed and bath) allows good zoning and permits a clear system of locks."

Separate children's access, yes, through family room. Contradiction or levels of concept completion.

- The combination living-family room, however, invites children's use or the central court and reduces the privacy of the adult domain. Wrong, here it's adjacency of same that invites use and reduces privacy. An argument taken too far, it has no need to defend articulation at this extreme level.

- Four clear zones; adults, family, parents and guests, children.

- Integrity of domains and efficiency of transfer

- Transition points now emerge as important primary elements in their own right.

- Equilibrium between community and privacy. Equilibrium between social types.

- To create a better human habitat, both the natural and the man-made must command equal respect.

- The validity of any planning principle for conservation or the creation of a human habitat can in the end be proven only in use.

  A commitment to a system must be made, constructed, and inhabited to prove its worth or failure.

- Life in equilibrium

- Artistic intuition and technical capacity can work together

- Unified field of environmental control in which art will once again be tempered by the purposeful discipline of science, and science be inspired by the insights of art.

FORM DETERMINANTS

Among the most pressing and long-term national needs and goals is Energy Conservation. Several approaches to this problem will involve greater adherence to traditional methods and some will involve new possibilities. The choice of materials is an essential decision which has great implications all the way from efficient production methods for the materials, to their eventual performance in the environment.

The architecture should exhibit simplicity in design for repairability, durability and ideally be maintenance-free, or designed for clarity and transparency in its mechanism, and therefore possibly user-maintained.

On the site during construction, there should be a limit in the number of sub-assemblies, as connections are costliest and least efficient, and potentially troublesome. In this regard, the limitation of all redundancies, from fragmentation of the various trades, to repeated functional or spatial planning, to unused bits of planning; i.e., the bedroom, in this regard, prefabrication of certain elements may be helpful; i.e. bathroom.

The architecture must express a tenet of the times as living within our means, and realize that pollution is a by-product of living itself; therefore, a change of life style is needed, and the architecture must provide for this change.

In order to minimize its balance, the built form must be adaptable and satisfy the preceeding requirements.

To these ends we must persue building with care, precision, and economy. We must take advantage of our perennial national ability, the assembly line, and steadily increase prefabrication with its attendant realizability of low cost construction.

An architecture inter-connected with weather, climate and nature.

The structure of the building industry tends to resist change; the problem must therefore be attacked by way of the manufacturers and the users. The product seen as a result of a well defined need, detailed with alternatives, and the use or performance value of the product in a changing milieu.

Other incentives, such as building homes from income before taxes must be developed by those in control of national economic policy.

Whichever strategy uses the least fuel, or provides the least pollution per btu. expended, must be adopted. Our giantism is straining the biological fact and we need to approach a smaller scale at some levels.

International needs and goals might be considered in responding to the above criteria by coordinating the design with the abundance of worldwide natural Portland cements.

The diverse population applicable to a general housing need, anonymous in its potential variety of individual requirement, surely includes others than the five-person family norm.

Personal and shared needs may flux, adding to a richness in the experience and expression of architecture as a unity for form determination.

The architecture should anticipate and provide for users with modesty and frugality.

The weakening of the nuclear family as a static form, and the realization of change in human groups over time, which has become a revolution in our living habits, should be an opportunity to take advantage of a diversity, in order to bring people together, old and young. From all economic and other castes. A prototype might be the Roman Baths, a place for gathering and socialization; or the Sauna, a pleasant cultural mixing. Again, this bringing together of people might save some of the costly effects of an atomized approach toward human environment. Now we are in the mainstream of opposition to the rugged individual as a major image and form maker, human interaction should be designed back into our housing.

The feeling of choice to inhabit other than the detached living pattern should be planned for. There should be a greater freedom to modify existing rules when rational analyses and efficiency (economy, ecology) suggest a new rule. Freedom of the many vs. freedom of the few, the architect must reach the many, especially in a mass phenomena like housing.

Because planning is an exercise in a non-deterministic conception of history, the planner may choose to adopt practices which are contrary to accepted standards. The main question is: "Can you get it built? And then, "Does it fulfill the Human and environmental requirement in its complexity." However, in this regard, it is not the personal choice which expresses the total spatial solution, but may physically adapt the middle ground of interspatial manipulation. Human release from the soil and natural systems and the subsequent anarchy of human possibility prevent the

rational development of the built environment over time.

It seems that the break with tradition apparent in the particularly American experience, has also brought a loss of centuries of knowledge and lessons in how the environment grows.

The freedom to cultivate the social intelligence as opposed to the detached life style, must exist, if man is to develop as homo sapiens, with the same wisdom as it should in our sentient ways. The built form must provide an option to satisfy the diversity of new and possible life styles.

To this end a shell for permanence and longevity is needed, with services and the interior malleable.

The bath and the toilet functions, redundancy not withstanding, however, which were previously separated, have been joined by practice and might be available as individual end products.

In terms of our products in general (and architecture), some might be given up; some given a minor place; some re-designed, and perhaps some from a simpler time, may find their way back into the environment.

In providing for a basic need, use, health and safety, it may be seen that the private bathroom is not a better survival tool and while it has some very intimate, pleasant human associations, under certain minimal conditions, less might be made of its importance.

In this general regard of need, use, health and safety, human welfare should be placed above technical efficiency.

Another possibility in this realm is to see the environment itself as so closely related to the human condition that the concerns for need, use, health and safety, are also environmental concerns. Then the care, feeding, and preservation of natural resources would be allied to man's well-being, as indeed is the case.

In terms of a basic welfare, I do not then want to be responsible for the psychological nuances of man. The aspirations of man are not to be stifled, but not cultured either by the architecture. Architecture doesnot make life; people make life, and life is not a theatrical event; it may not be a stage set unless it vaguely , rudely, at a fundamental level, only, is planned for as an event.

The architect should use all obvious opportunities to enrich the particularly Human condition, without creating those opportunities apart from a natural context; in their conservative way he will not dictate the limits and possibilities of the Human condition.

A subsistence minimum would be concerned with fresh air, light, and the settlement as built form.

Through the years, the square footage requirements have steadily increased. This is an example of the want over-shadowing the need, and with this has come an attendent over-emphasis on privacy. This is the over-articularization of room, next room, room, etc., and too much territory given over to non-essentials and even to individuals and their real needs.

We need a blank canvas and an open palette in which human manipulation of a framework may respond to community, individual or traditional life styles.

A design of housing types, generics in housing might begin with a regional, climatic approach and then narrow itself down to an analysis of micro-climate for form determination.

In keeping with the previous prerequisites, a miniatureization of some architectural elements is inevitable, due to technology and desirable due to our present conditions, as the smaller the domain to be controlled, the eager it is to control it.

An emphasis on acceptive growth and the development of small tight-knit spaces, would satisfy many of these criteria.

The primitive house is seen as a proto-type under which rich human experiences are allowed to develop under one domain which is, however, very specified by custom and years of tradition.

Symbiosis, as a process in the environment, is to be a guideline for the continual growth of the built-form.

A multiple-use gesture might be achieved by the open-plan in which many concerns may develop in their particular ways.

There is an appropriate precise relationship between form and the controls that produce it. The bicycle is an example of a frame component which needs only small adjustments to be acceptable to various individuals; its wheels, the function objects, work only in one position, however, as there is an appropriate, precise form, for this efficient means of travel which is least consumptive of BTU's.

We need to have building in harmony with nature; and the open plan for alternate space uses, and various life styles.

Architecture is a fragile network of inter-locking and inter-dependent systems. It should make use of zones for seasonal use adaptation.

Form results from the way in which it functions as an environment for social and economic life. We must search for infinite variety within a repetitive system, to satisfy both the varied social and restrictive economic conditions that prevail in architecture today.

As with a snail generating his shell, the same architecture which builds the house, constructs the door; this multi-use gesture must be a keynote for a built form that hopes to attack the entire problem in a stroke if possible.

Another proto-type would be the Chateaux and Manor Houses of a previous time; they were built for the wealthy but were also built lacking in privacy--the rooms were used as passages, the spaces were inter-changeable. One must imagine this catering to man's gregarious nature.

The analogy in plumbing, electrical and circulation systems to an organism that is tree-like, is literal for these systems; they grow in just these ways, so it might also be possible that the spaces could correspond to this nature in accretion, while allowing invention and improvisation to exist still. Materials, morphology, light, configuration, orientation, placement and a varied performance of the building shell will all exert forces on the building type.

We also might see the merging of special purpose spaces and service spaces, with the greater

general purpose space.

Present housing regulations are adverse to the basic freedom of choice in that these standards dictate a level of size and convenience that is too restricting; they should be relaxed so that need, use, health and safety, and natural needs and goals, etc. are the criteria for human dwelling. We should re-evaluate the standards attached to room labels and get back to designing spaces for use.

The original intent of codes is often forgotten or not considered, and as technology changes so must the codes. We need performance standards based on data and measurements; not on accepted canons for procedure.

In some cases the required functional hierarchies cannot even be organized as such because of code restrictions. FHA actual criteria have not changed to keep in step as the national goals have. They control the emphasis, locations, and sizes of elements that have been steadily rising in dimension with a national fervor; they reinforce this trend, give it license, and in this way promote waste.

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APPENDIX

THESIS STATEMENT:

NATIONAL NEEDS AND GOALS, A DIVERSE POPULATION, BASIC FREEDOM OF CHOICE, AND THE DESIGN OF SPACE COMPATABLE WITH NEED, USE, HEALTH AND SAFETY, SHOULD BE THE CRITERIA FOR GENERIC HOUSING DESIGN BASED UPON PERFORMANCE STANDARDS.

NATIONAL NEEDS AND GOALS:

ENERGY CONSERVATION. CHOICE OF MATERIALS. EFFICIENT PRODUCTION METHODS. DURABILITY AND MAINTENANCE FREE. LIMIT SUB-ASSEMBLIES. LIVING WITHIN OUR MEANS. ELIMINATE REDUNDANCIES. POLLUTION A BY-PRODUCT OF LIVING ITSELF THEREFORE A CHANGE IN LIFE-STYLE. MINIMIZE OBSOLESCENCE.

A DIVERSE POPULATION:

OTHER THAN FIVE PERSON FAMILY NORM. PERSONAL AND SHARED NEEDS FLUX FOR RICHNESS. USERS WITH MODESTY AND FRUGALITY. WEAKENING OF NUCLEAR FAMILY.

FREEDOM OF CHOICE:

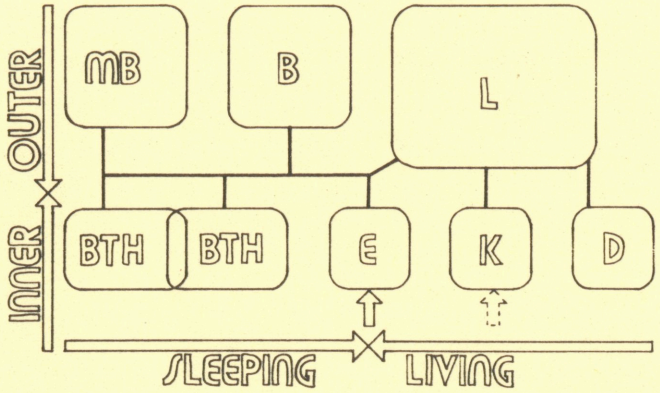
TO CHOOSE OTHER THAN DETACHED LIVING PATTERN. GREATER FREEDOM TO MODIFY RULES. OF THE MANY VS. THE FEW. PLANNING IS A NON-DETERMINISTIC CONCEPTION OF HISTORY. NOT PERSONAL CHOICE EXPRESSING SPATIAL, SOLUTION. INTERSPATIAL MANIPULATION.

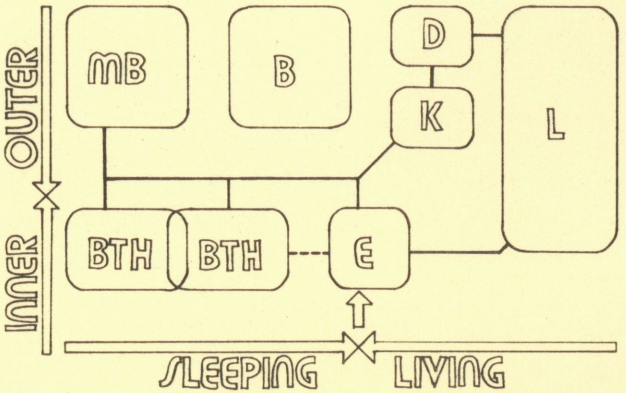
NEED. USE. HEALTH. SAFETY:

PRIVATE BATHROOM IS NOT A BETTER SURVIVAL TOOL. HUMAN WELFARE PLACED ABOVE TECHNICAL EFFICIENCY. CARE, FEEDING AND PRESERVATION OF NATURAL RESOURCES.

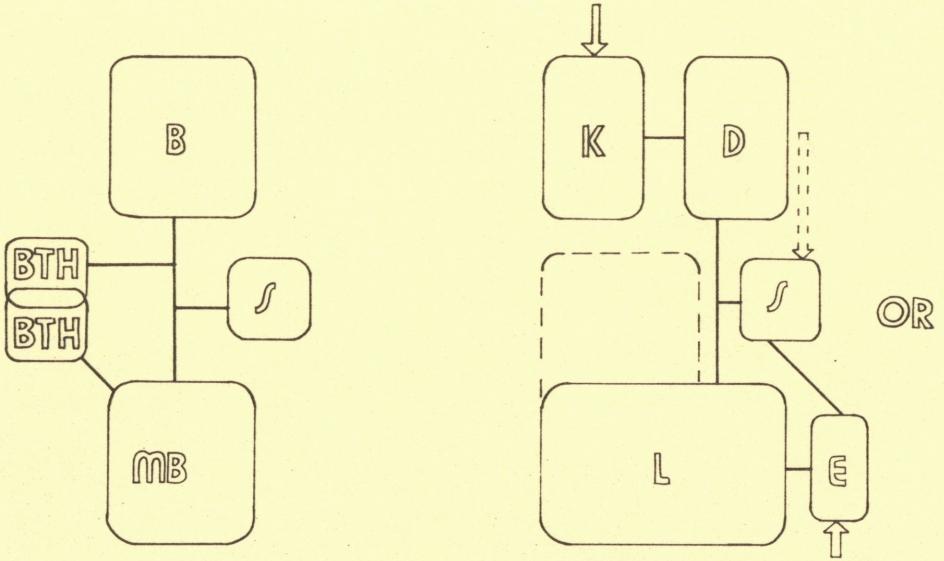
GENERIC HOUSING DESIGN:

CLIMATE REGIONAL-MICRO. MINIATURIZATION. ACCRETIVE GROWTH. SMALL. TIGHT KNIT. PRIMITIVE HOUSE. SYMBIOSIS. A MULTI-USE GESTURE. OPEN PLAN.

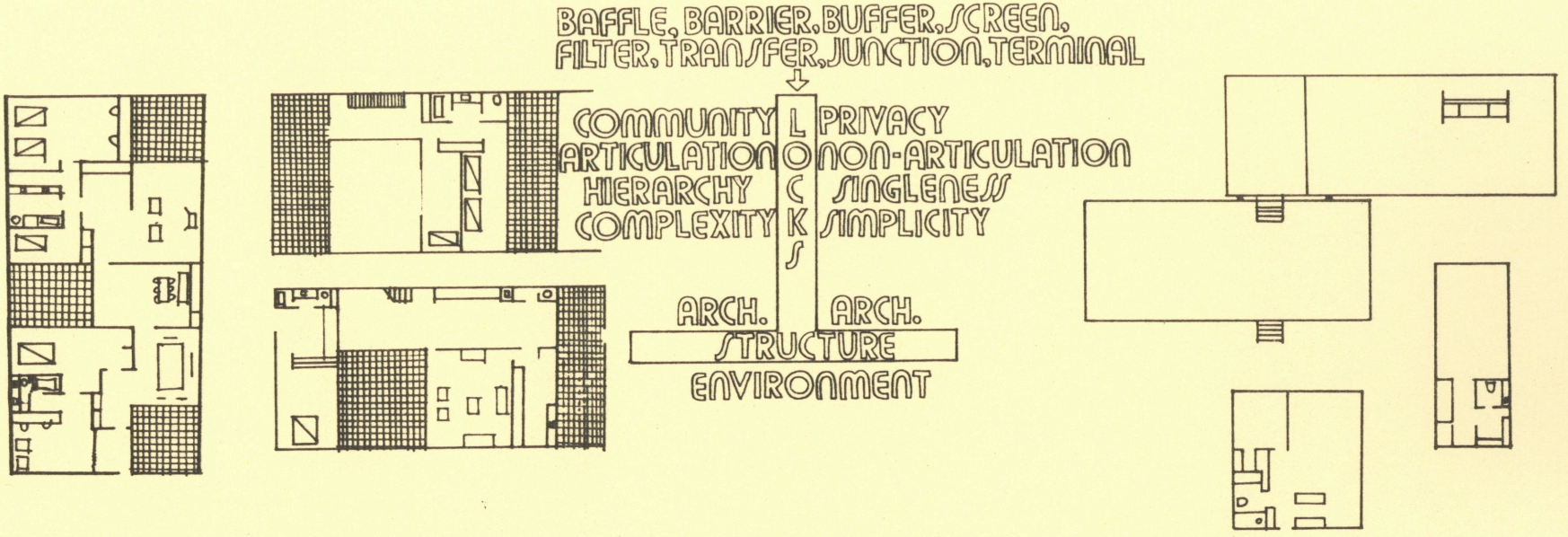


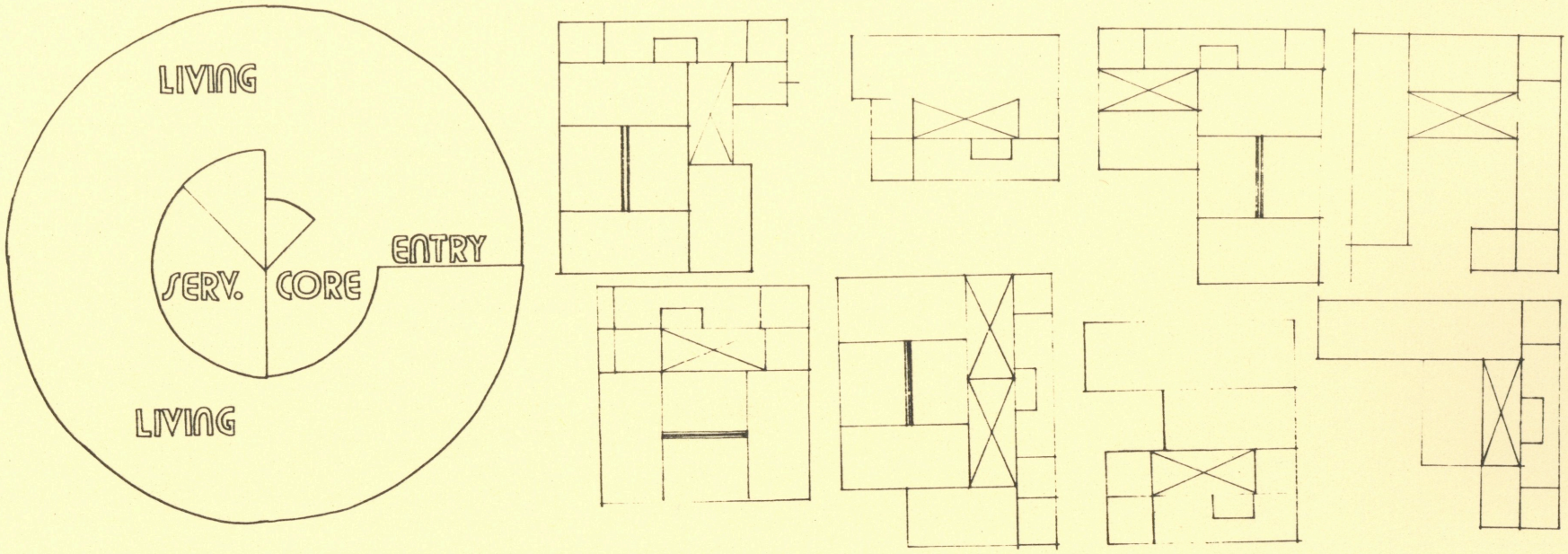


SINGLE EXPOSURE TYPE APT.



DOUBLE EXPOSURE TYPE

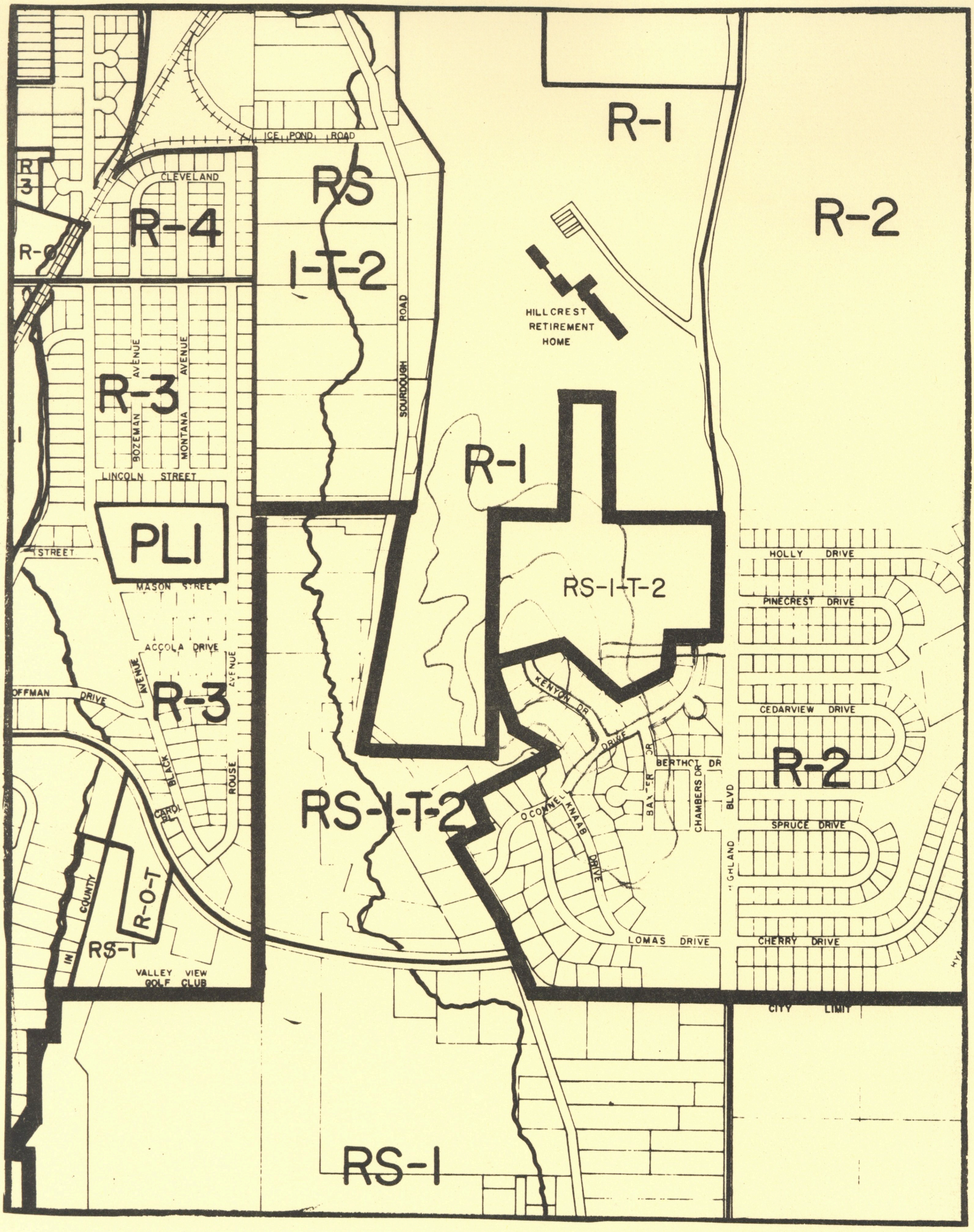

BAFFLE, BARRIER, BUFFER, SCREEN,
FILTER, TRANSFER, JUNCTION, TERMINAL
COMMUNITY
ARTICULATION
HIERARCHY
COMPLEXITY
LOCKS
PRIVACY
NON-ARTICULATION
SINGLENESS
SIMPLICITY
ARCH.
ARCH.
STRUCTURE
ENVIRONMENT

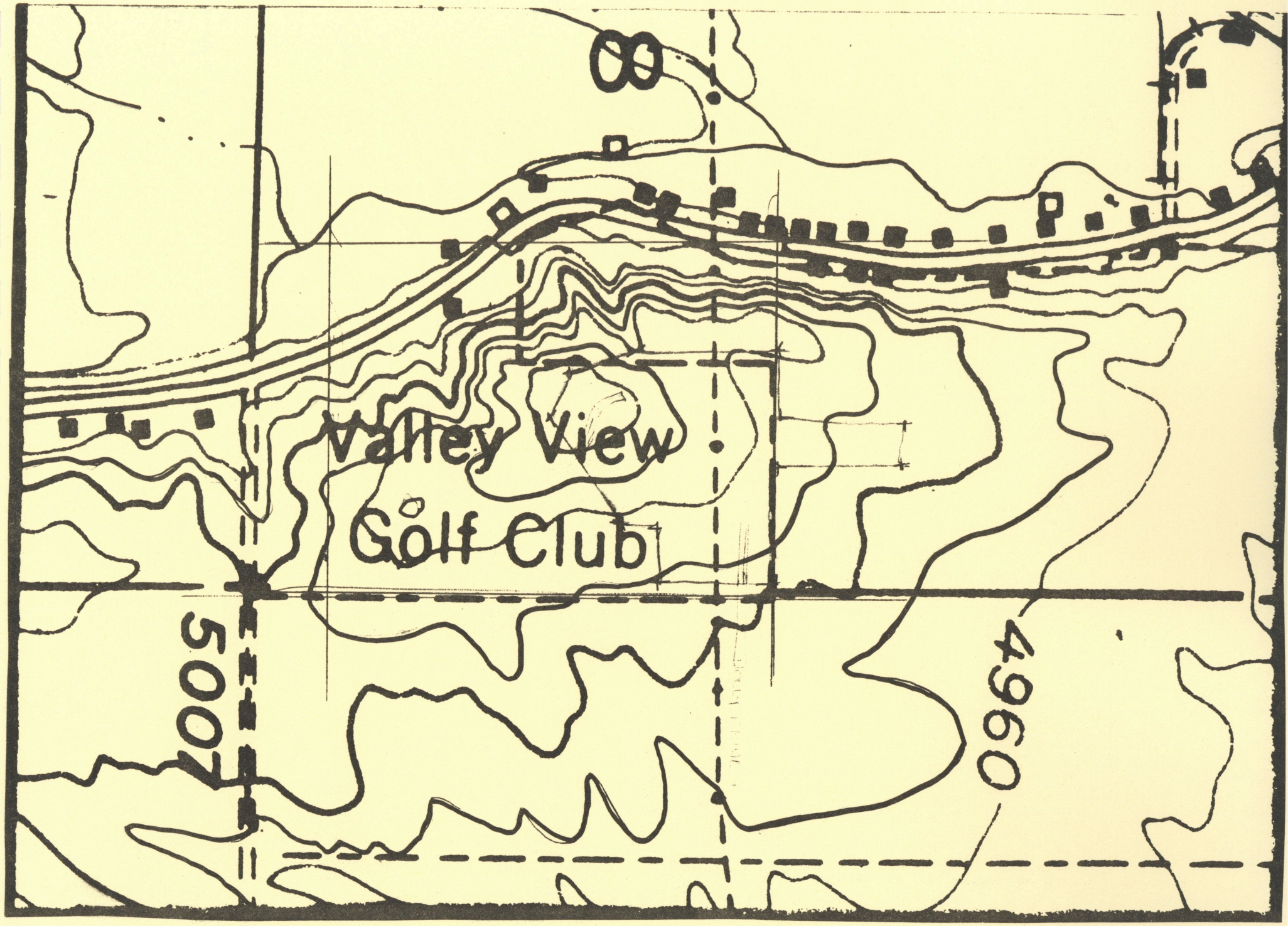

LIVING
SERV.
CORE
ENTRY
LIVING

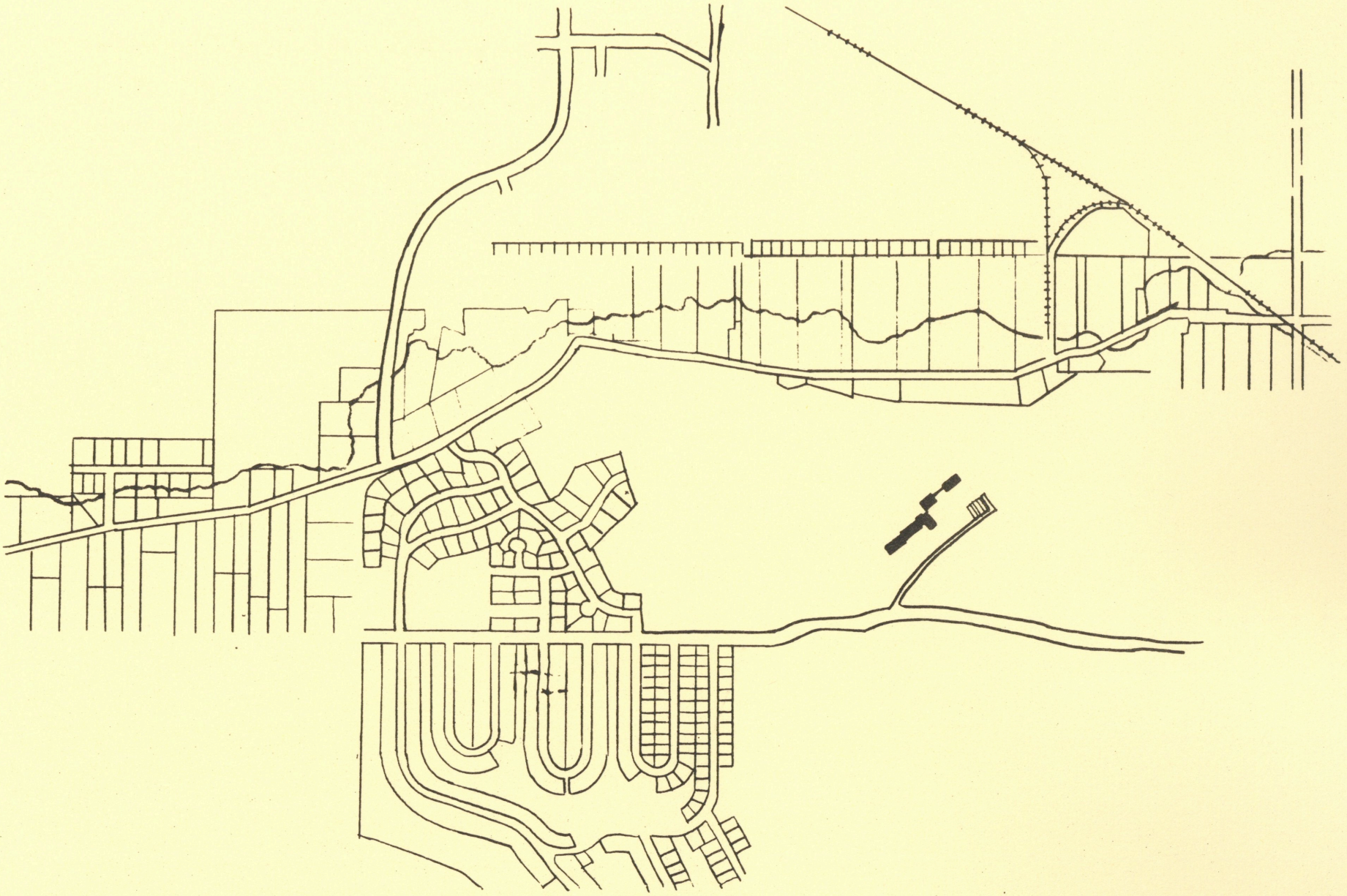

UTILITY:KITCHEN:BAR:B-Q:PANTRY
GARAGE:GARDEN:STO:NURSERY:M-BED:DOUBLE:SINGLE:DORM:BASSINET
POOL:PRIVATE:GUEST:BOYS:GIRLS:CLO:PATIO:RECREATION:HOBBY:LIVING:SICK:OUTDOOR:LAUNDRY:BATH:TUB:SHOWER:SAUNA:DECK:
HELP
COST
METHOD
NECESSITY
VIR
TASTE
SIGHT
CONTROL
FUNCT
HEAR
FRIENDS
RELAX
SERVE
PRODUCE
PROVID
PREPARE
PREVENT
LOCATION
FISH
LIVE
OIL
ENERGY
LABOR
HEALTH
BIRTH
RIGHT
CLOTH
HABIT
CLIMATE
FAMILY
DINING
FAMILY
PORCH
LIBRARY
DESK
GUEST
BATH
SMART
USE

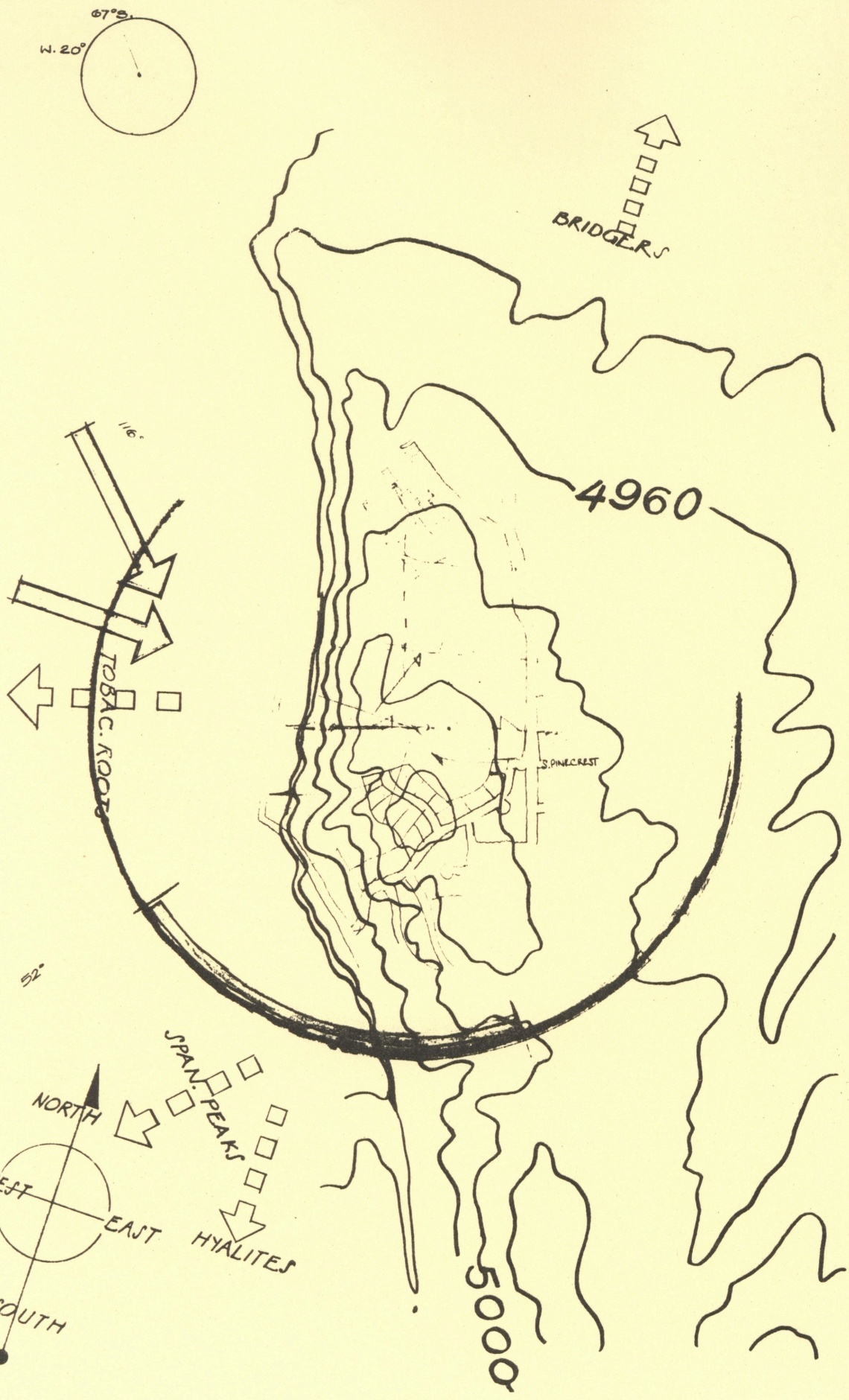
BAGS OF GOODS
MENS SIDE
MEN VISITORS
SEAT OF HONOR
GODS
HOSTESS
HOSTS
BED
CHILDN VISITORS
FIRE
KIN
WOMEN VISITORS
WOMENS SIDE
HOUSEHOLD UTENSILS
POOR
CATTLE
SERVANTS
YOUNG

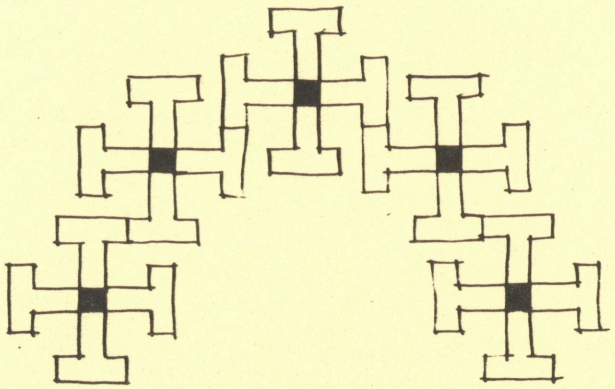
4925
18
19
Valley View
Golf Club
5000
5007
4960
Sunset
Hills
Cemetery
Bozeman
Country Club
20
21
5000
4960

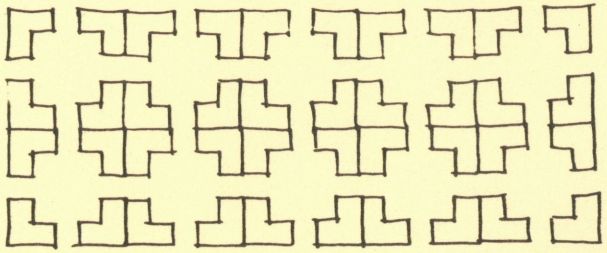

R-1
R-2
R-4
R-3
R-0
RS
I-T-2
ICE POND ROAD
CLEVELAND
HILLCREST RETIREMENT HOME
SOURDOUGH ROAD
BOZEMAN AVENUE
MONTANA AVENUE
LINCOLN STREET
PLI
MASON STREET
ACCOLA DRIVE
OFFMAN DRIVE
BLACK AVENUE
ROUSE AVENUE
CAROL PL
R-0-T
RS-1
VALLEY VIEW GOLF CLUB
RS-1-T-2
KENTON DR
DRIVE
BERTHOT DR
CHAMBERS DR
BLVD
O'CONNELL KNAAB DRIVE
LOMAS DRIVE
HOLLY DRIVE
PINECREST DRIVE
CEDARVIEW DRIVE
SPRUCE DRIVE
CHERRY DRIVE
CITY LIMIT

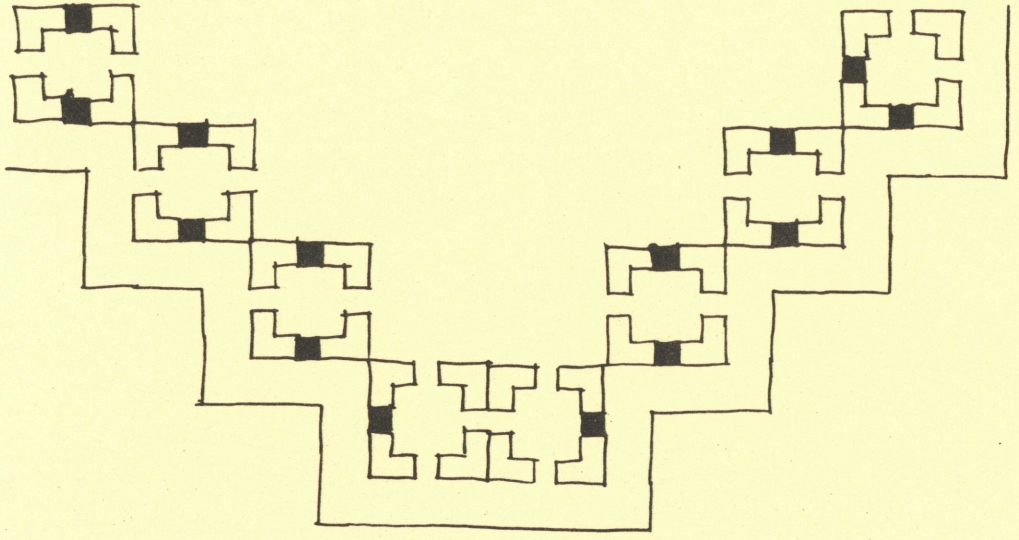

Valley View
Golf Club
5007
4960

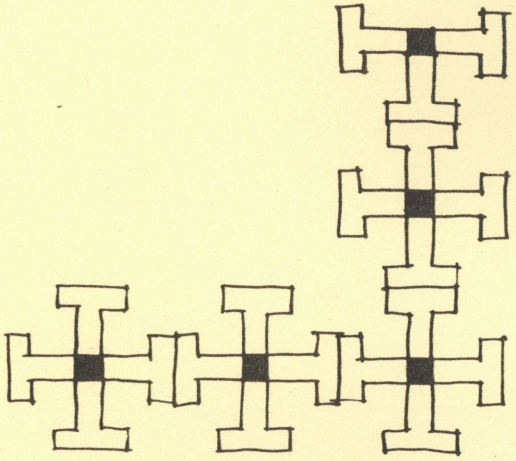


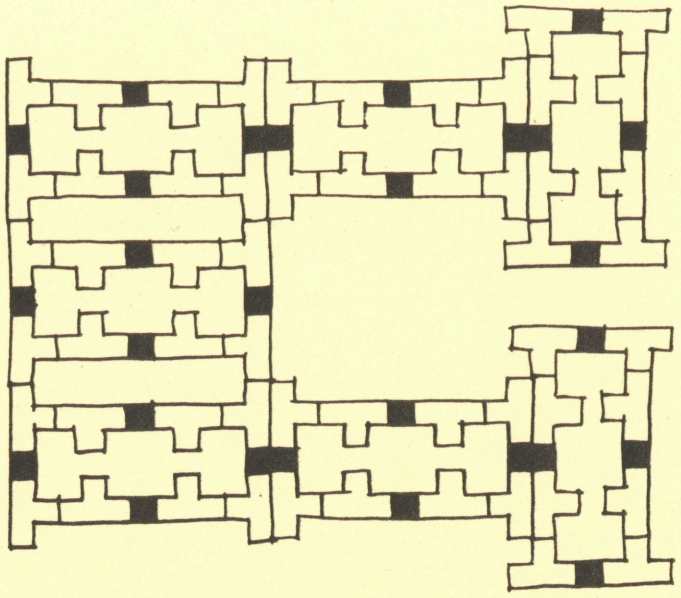

67°S.
W. 20°
BRIDGERS
4960
116°
TOBAC. ROOTS
S. PINECREST
52°
SPAN. PEAKS
NORTH
WEST
EAST
SOUTH
HYALITES
5000

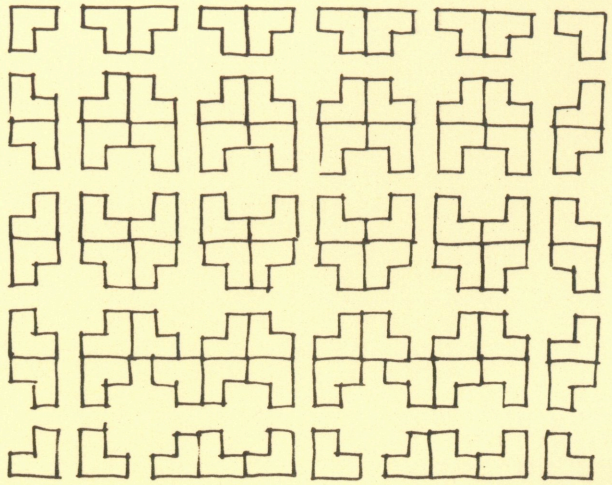


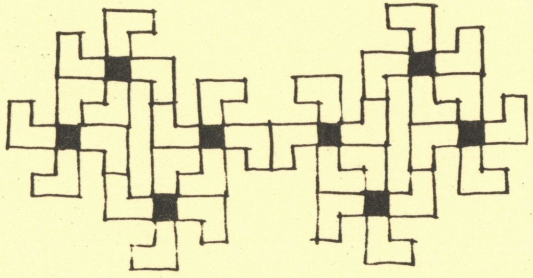


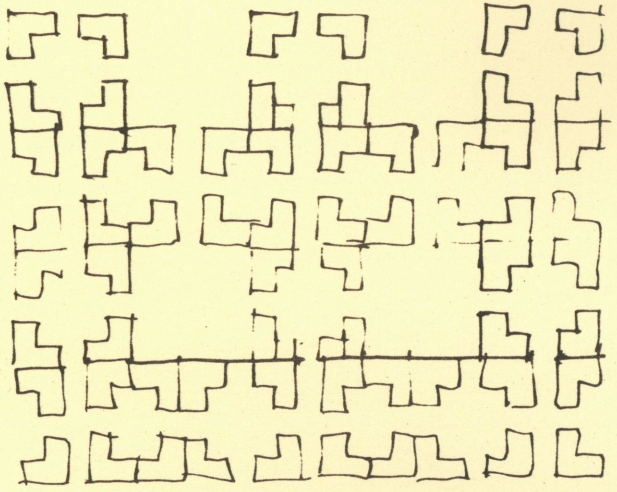


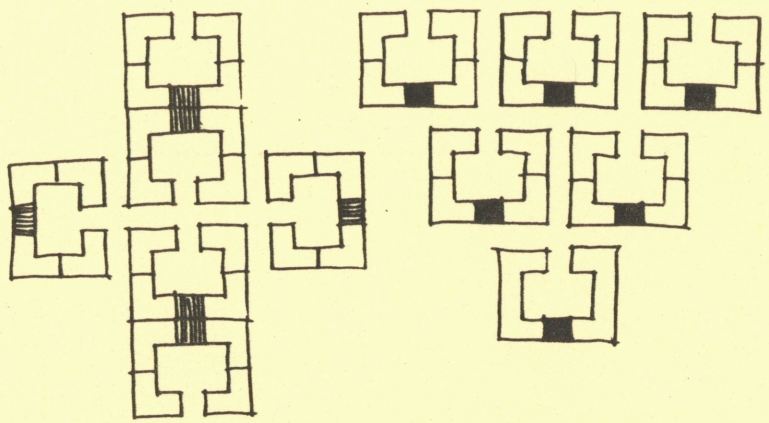


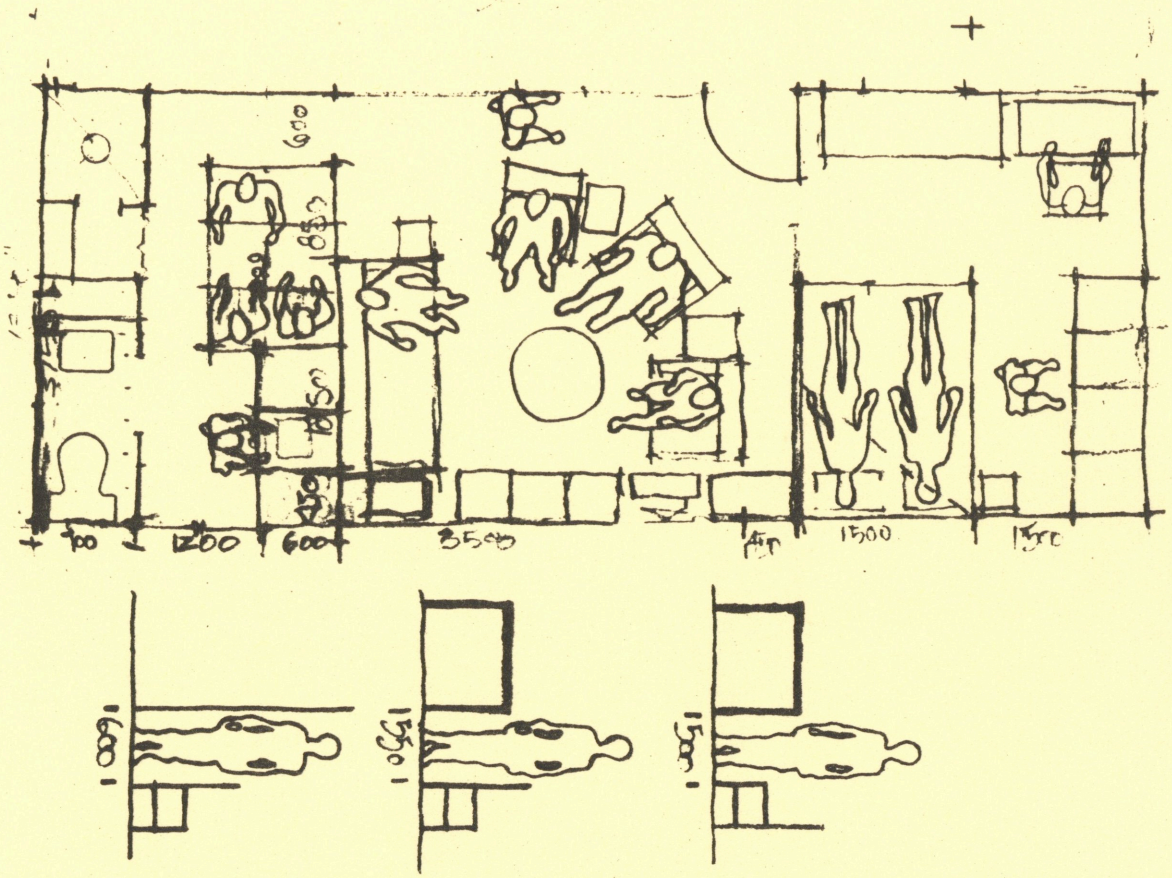




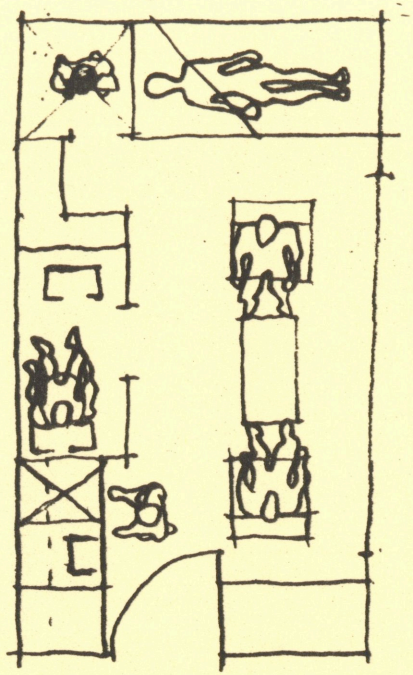




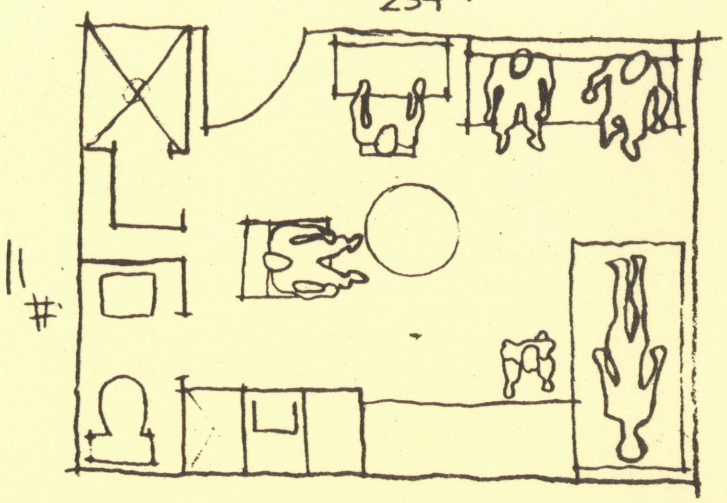




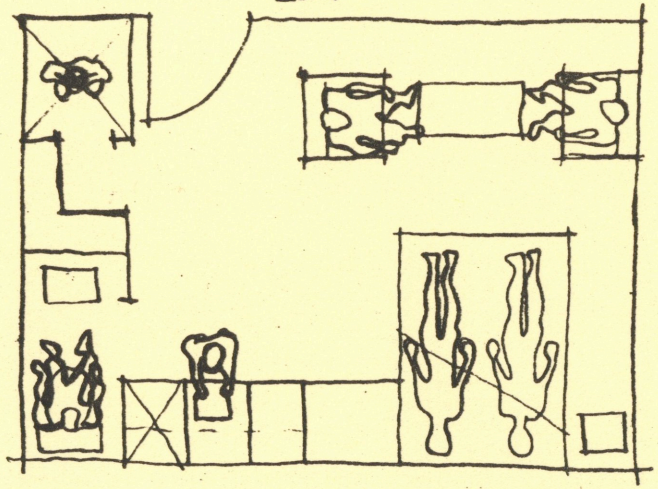
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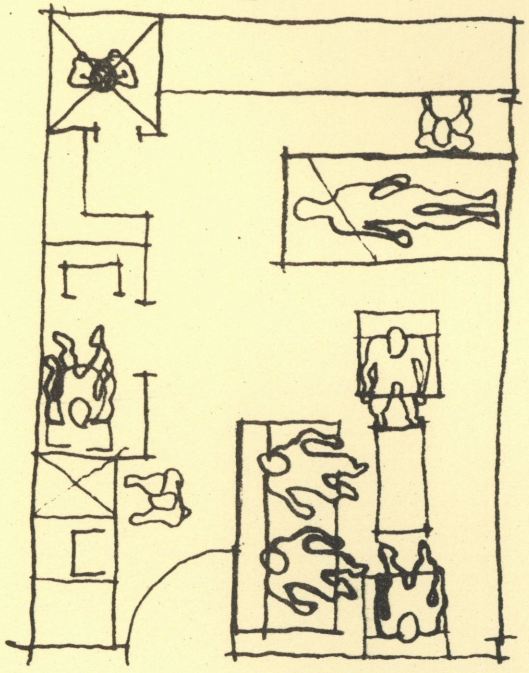
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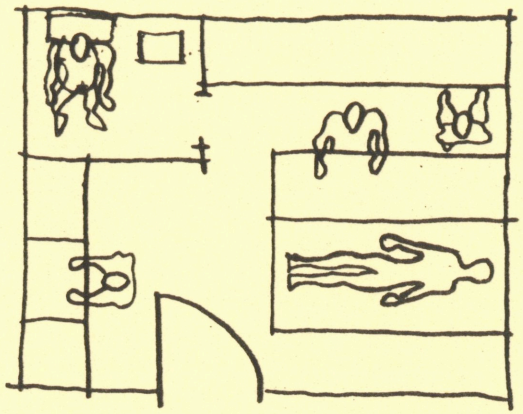
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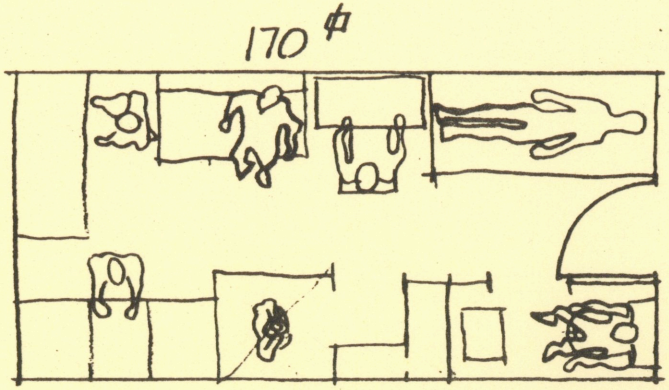
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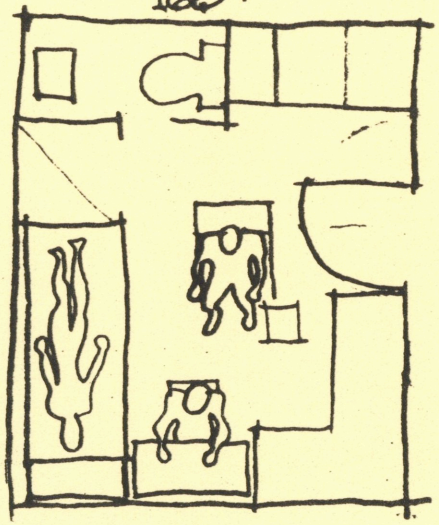
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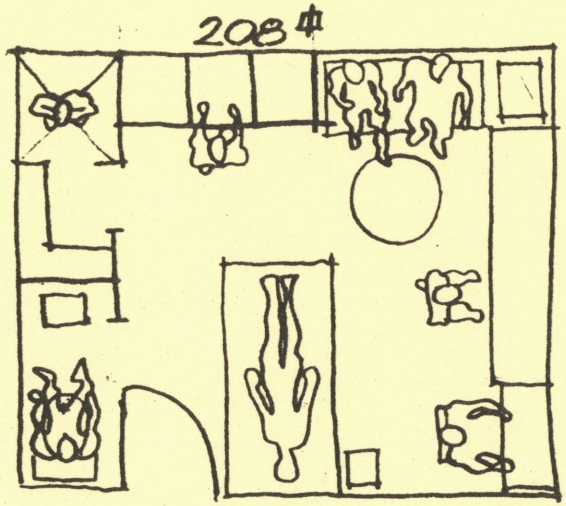
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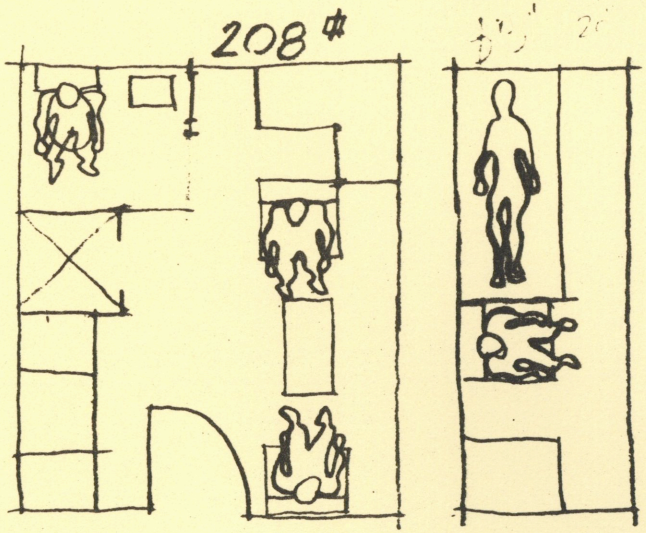
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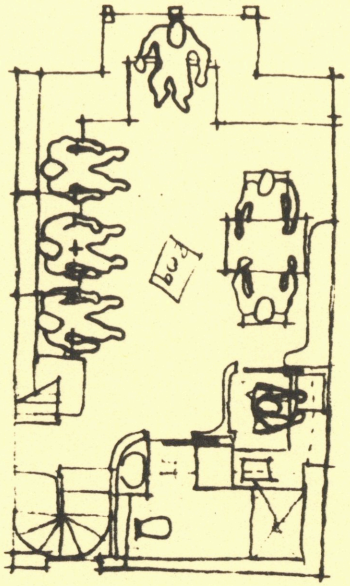


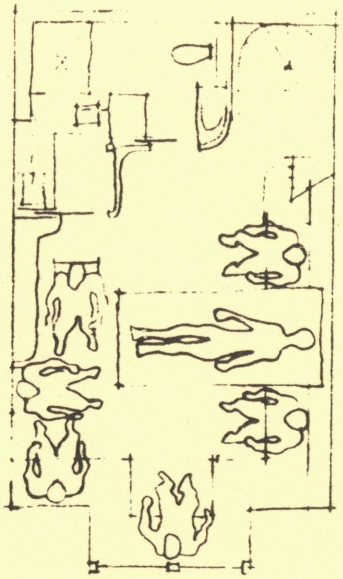
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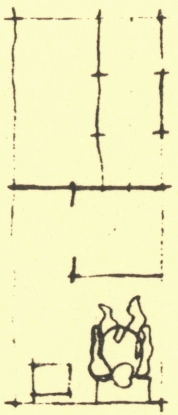


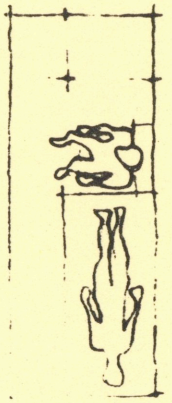
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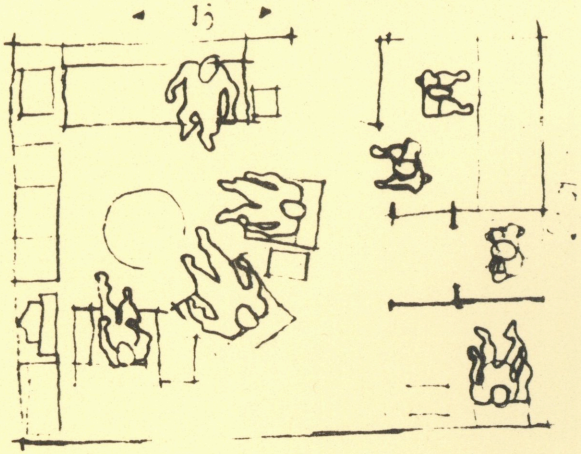


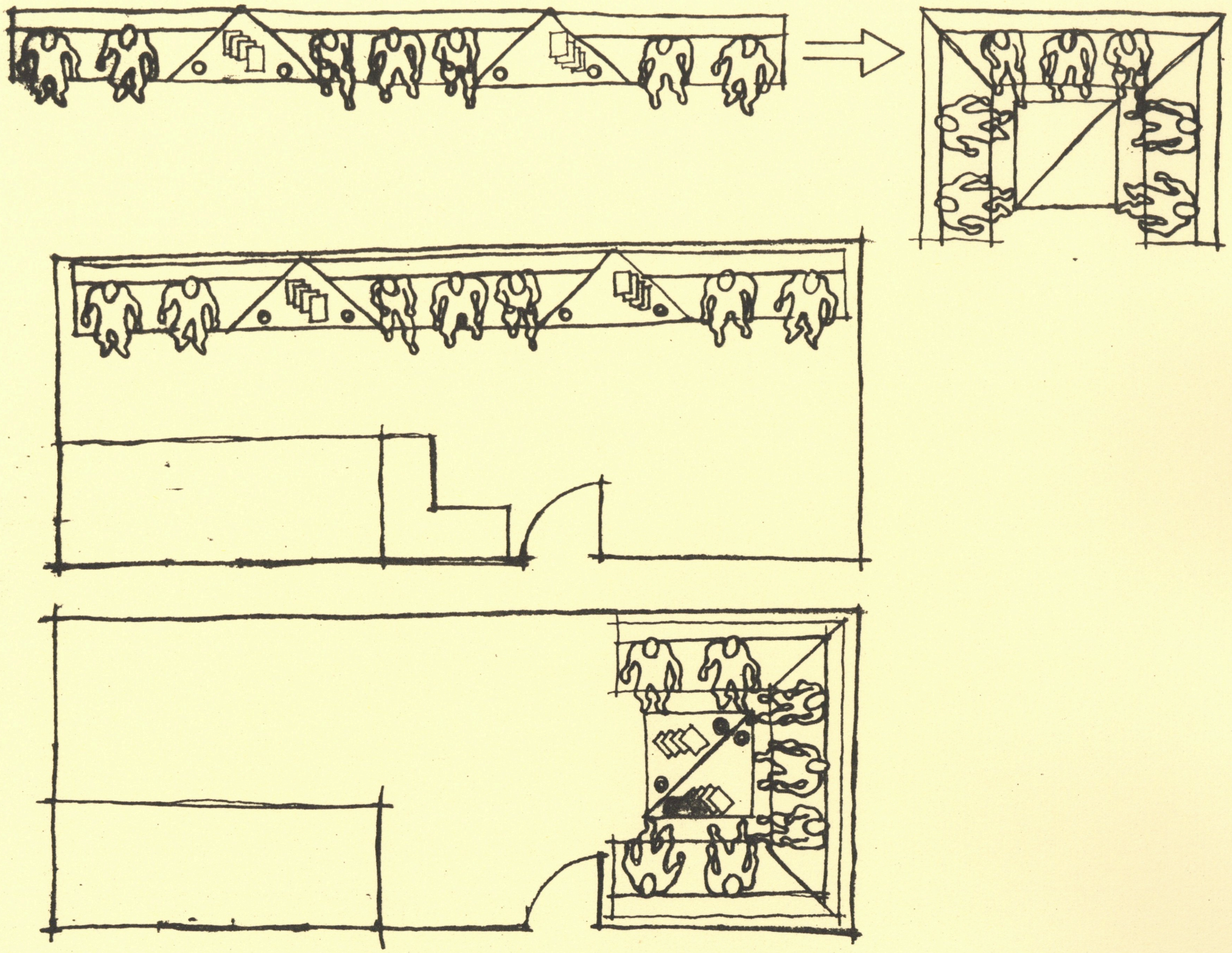


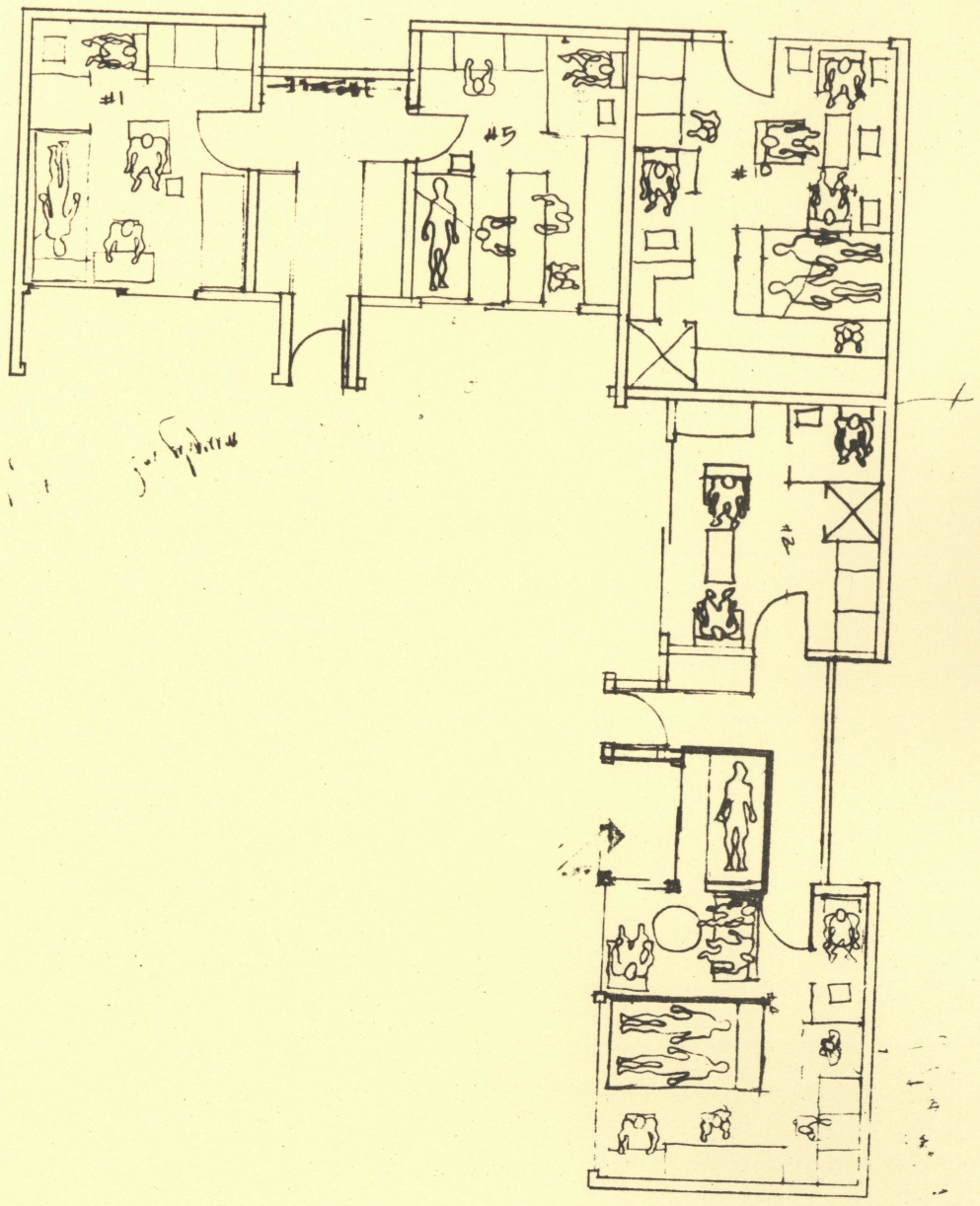


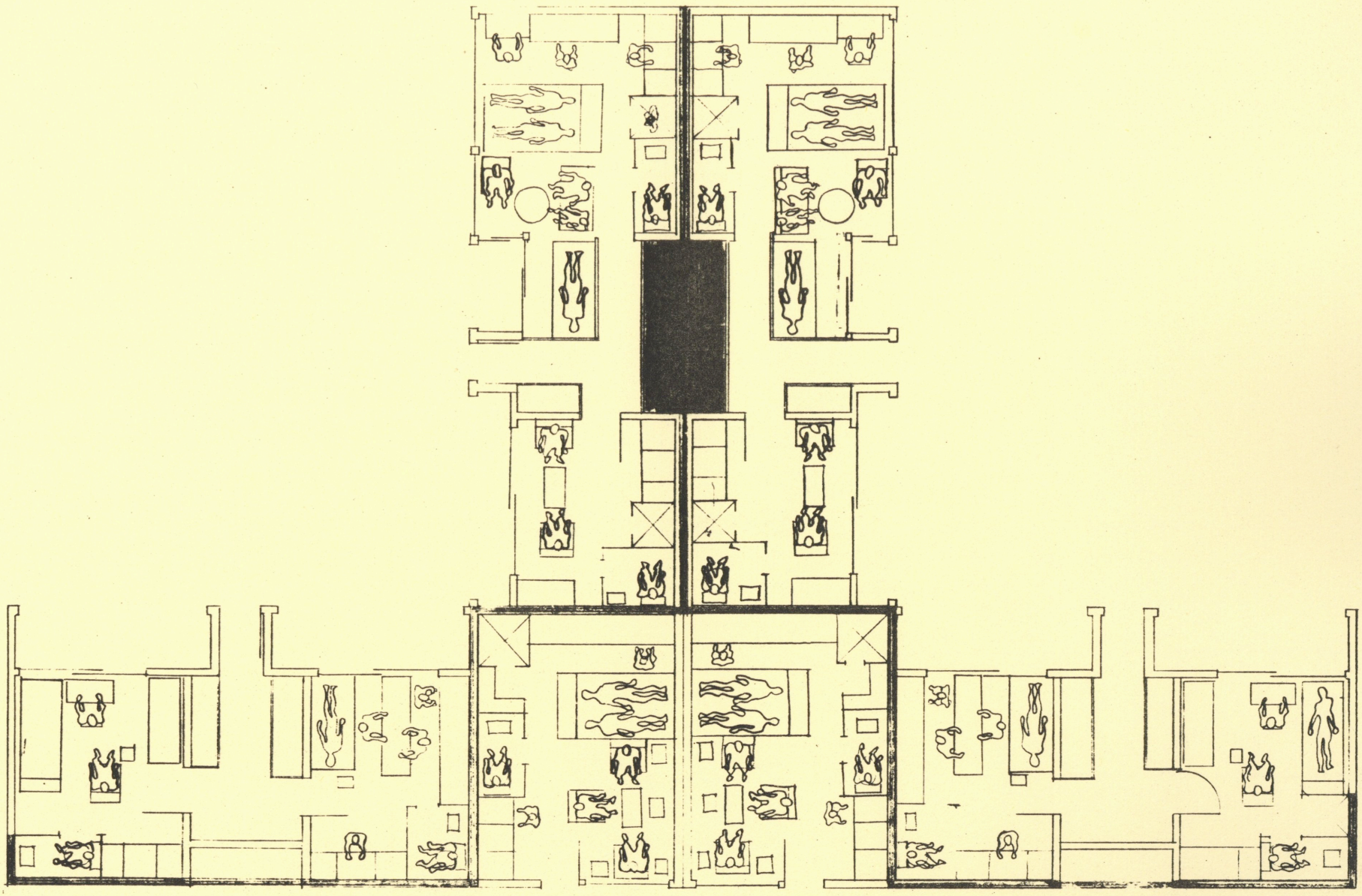


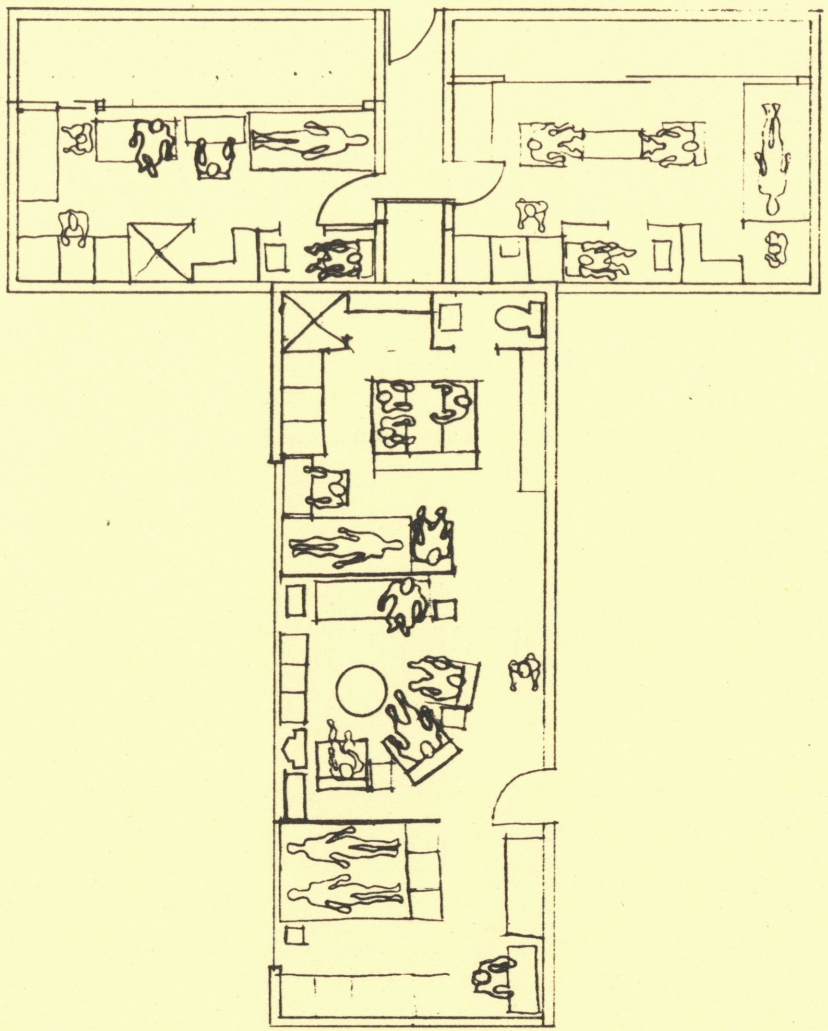


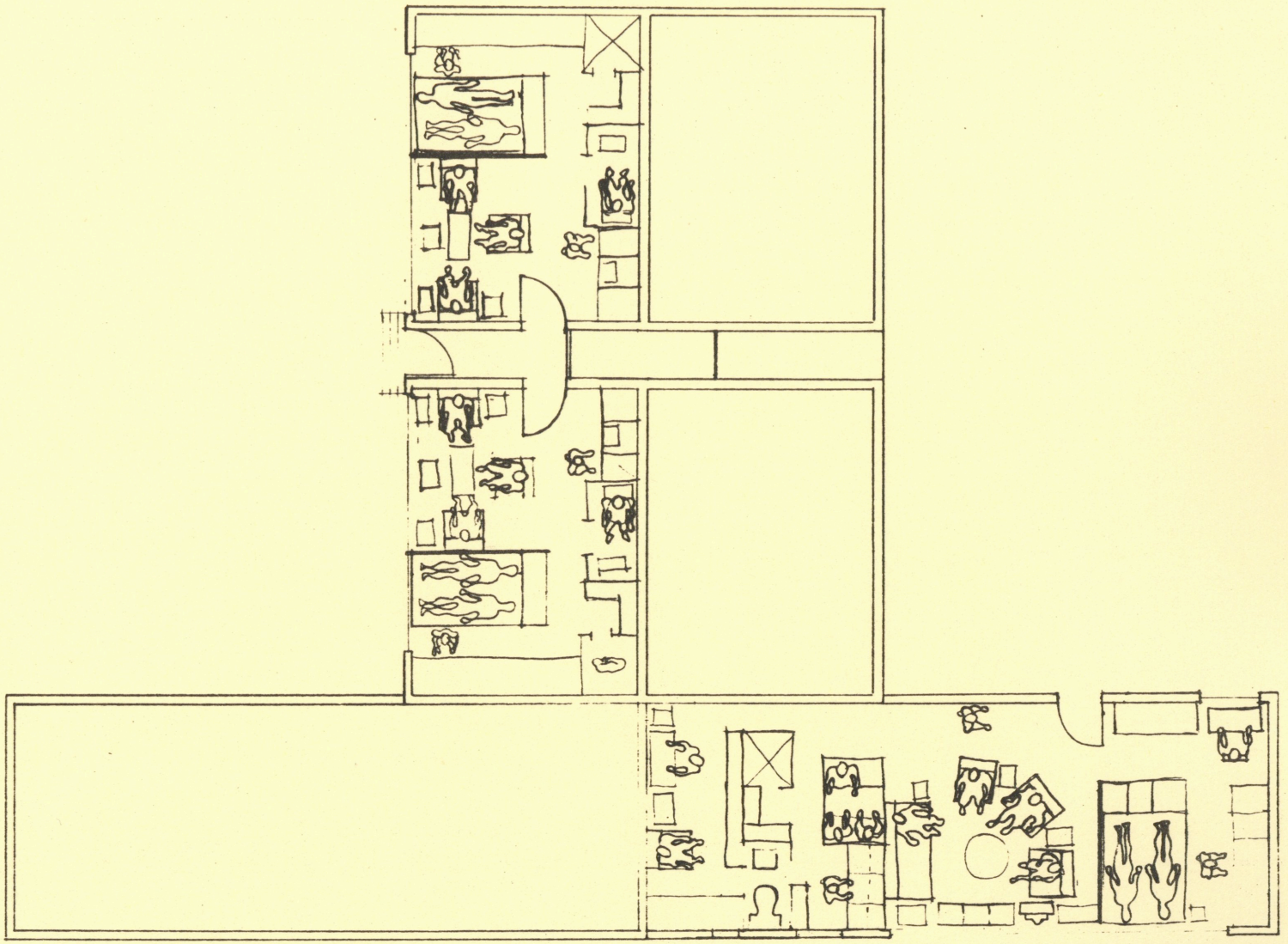

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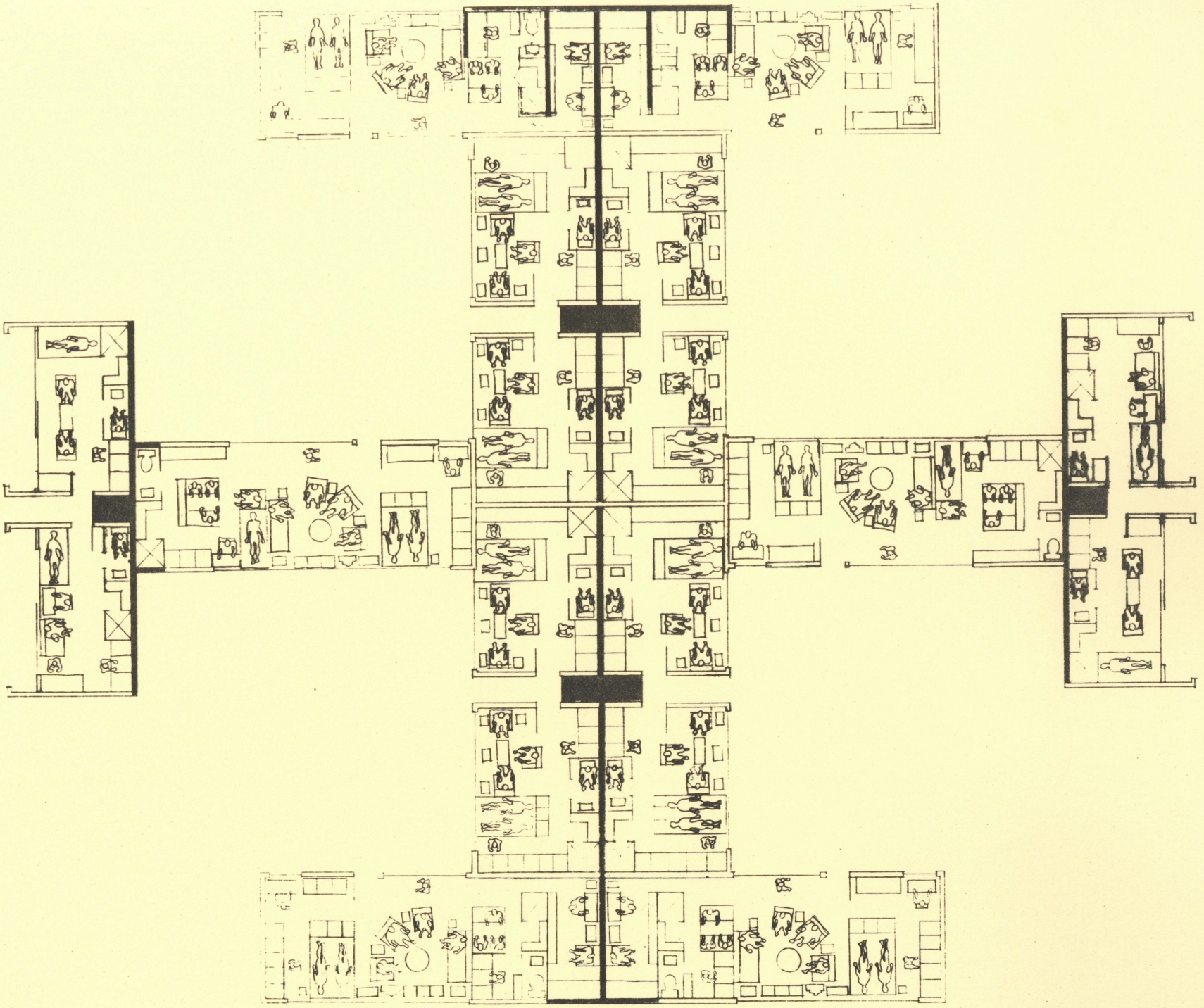


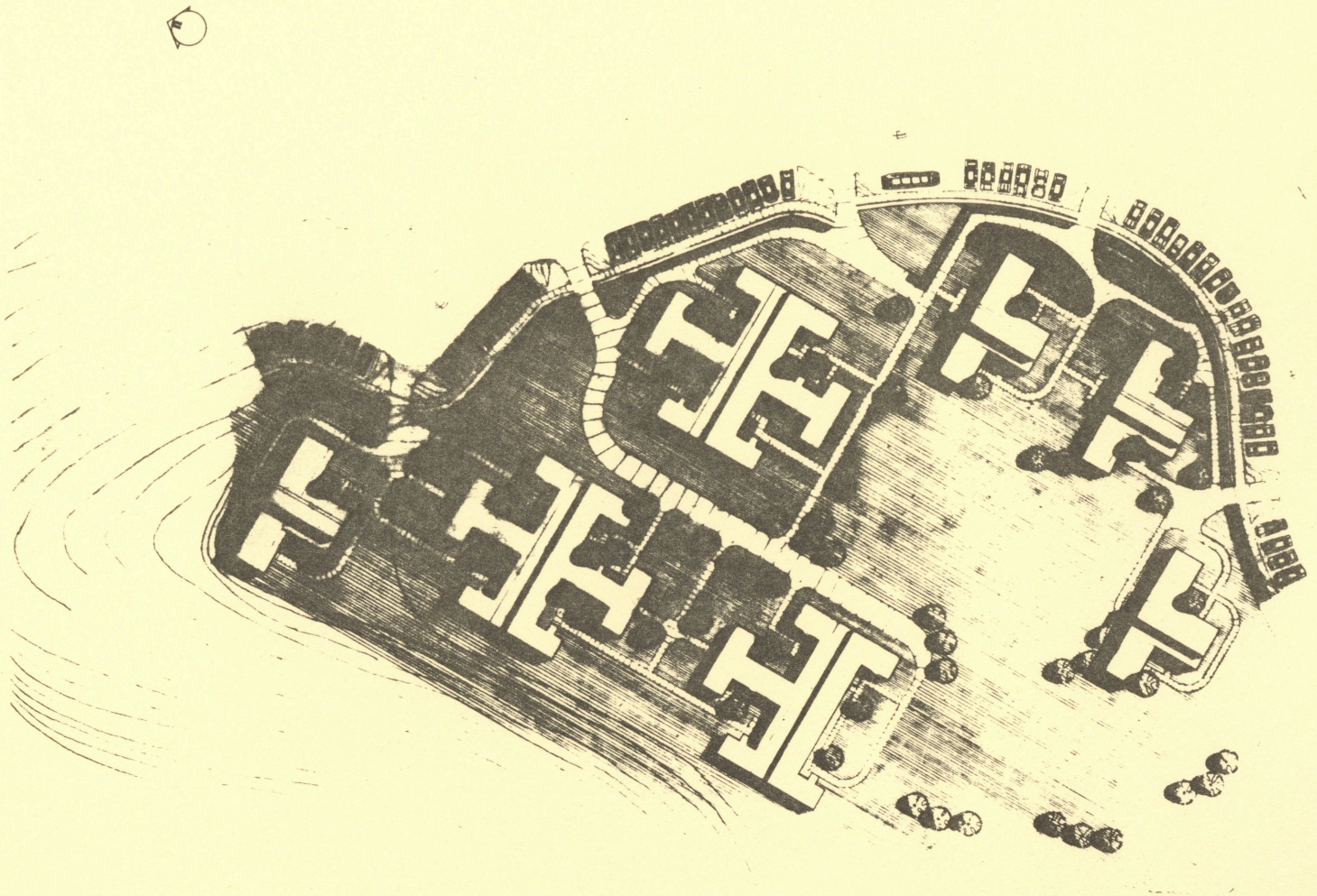




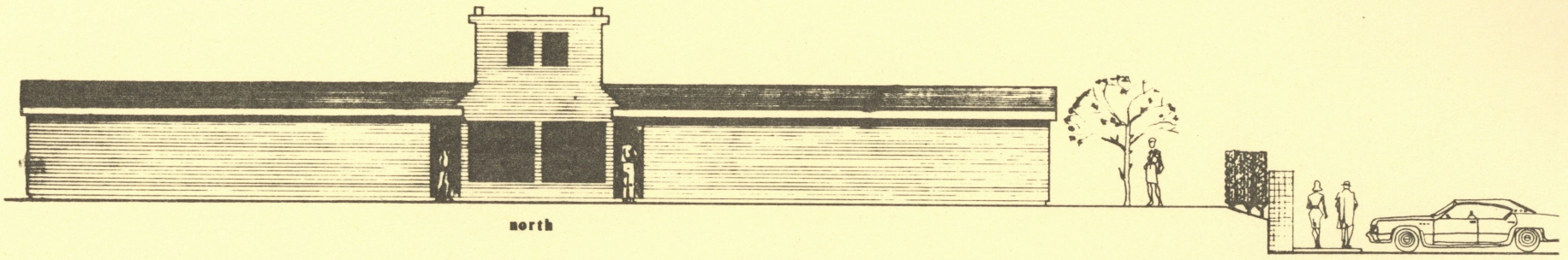




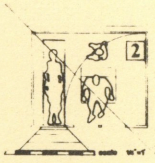




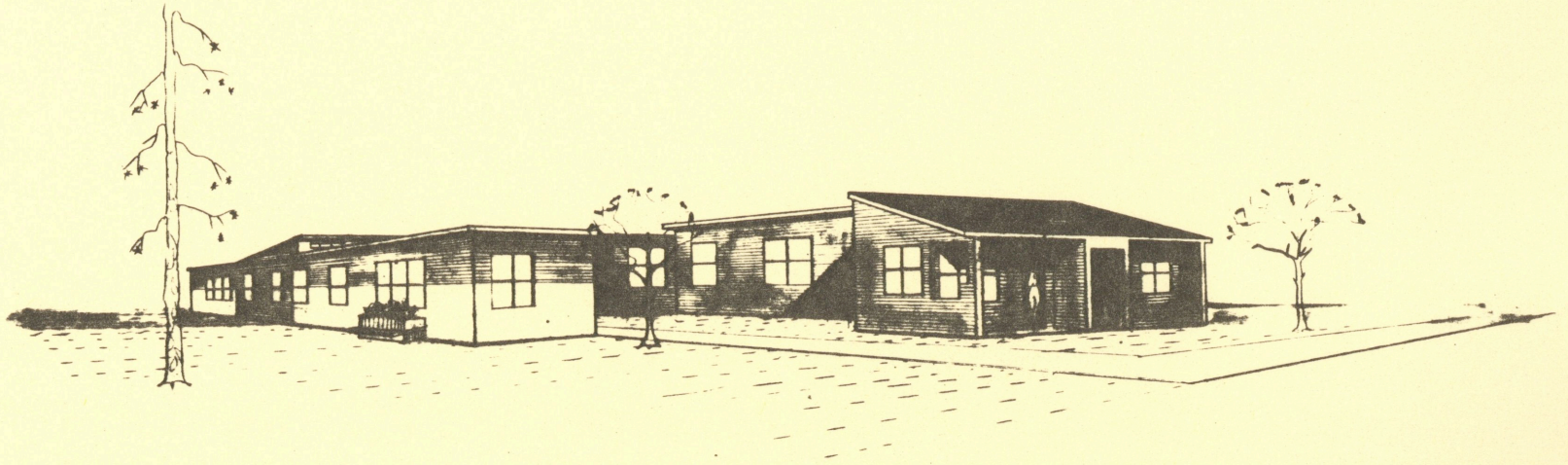
site plan

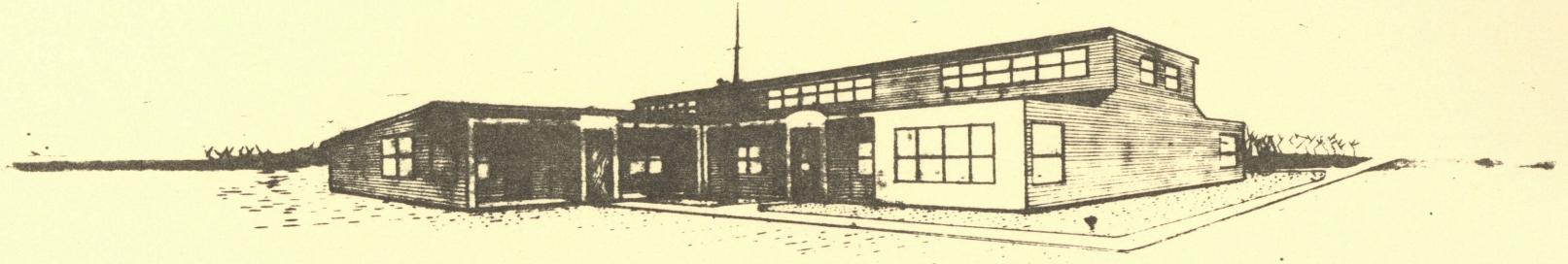


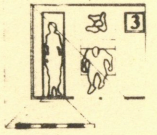
north



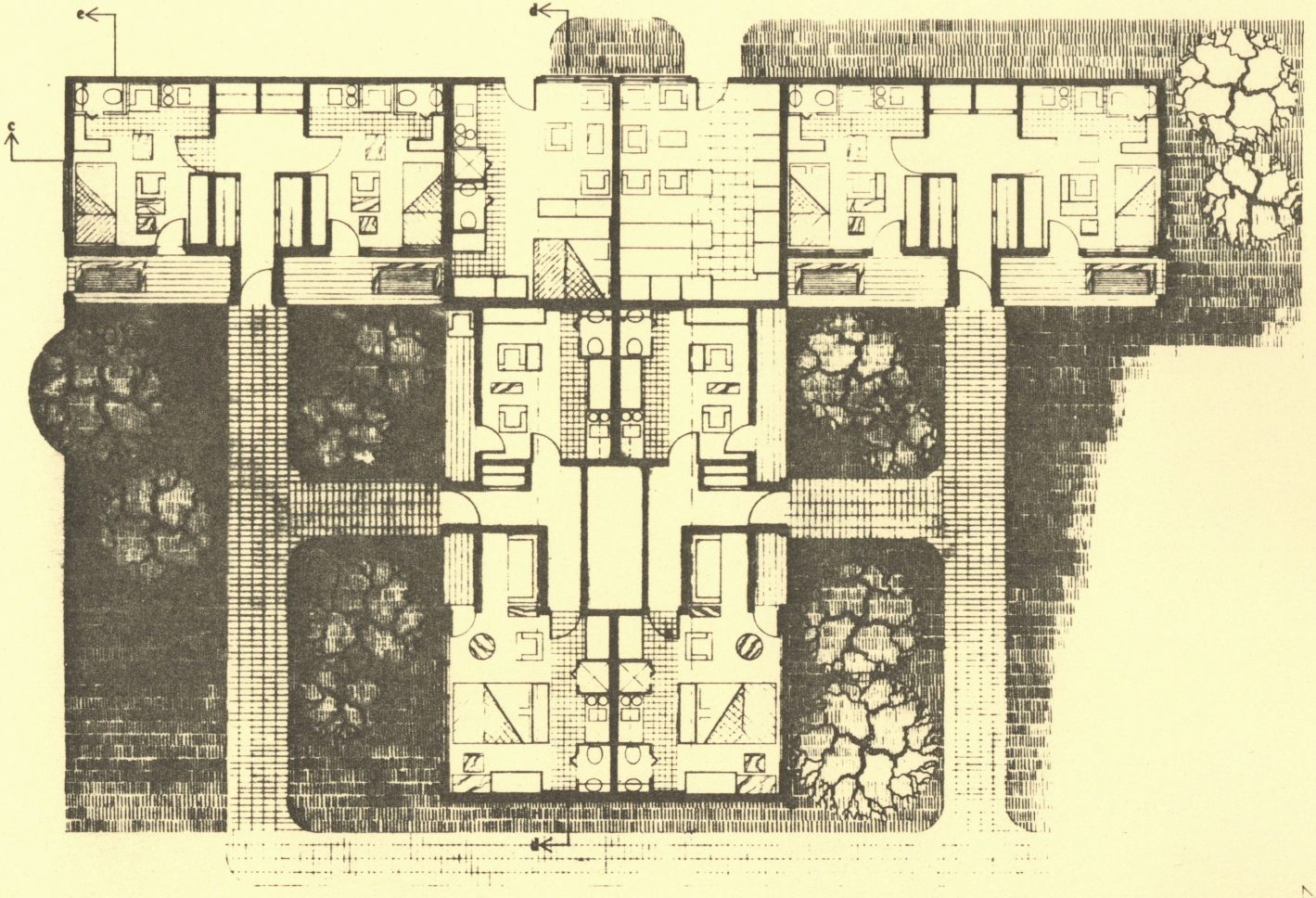
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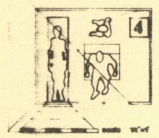




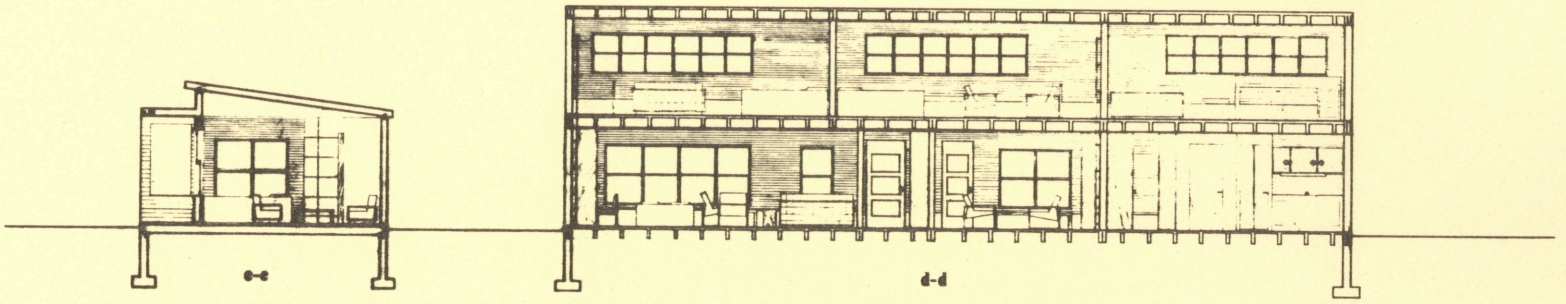


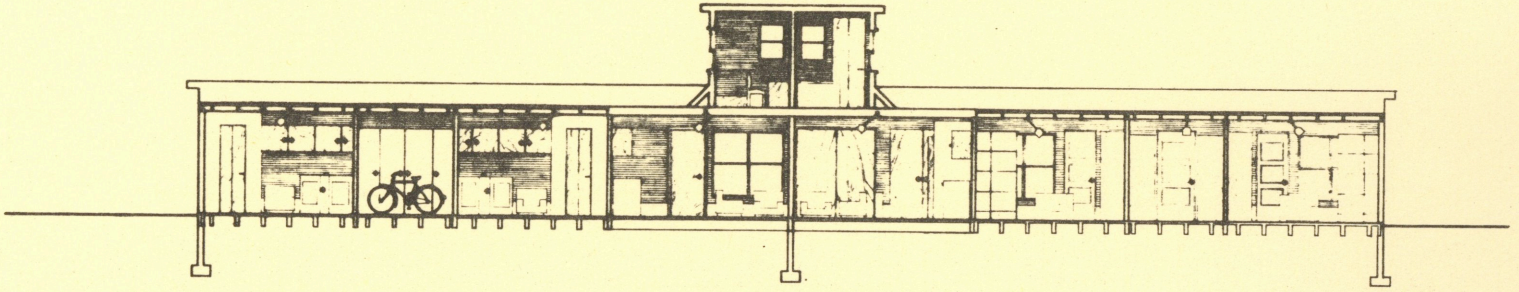
perspective

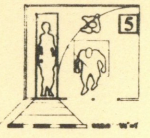




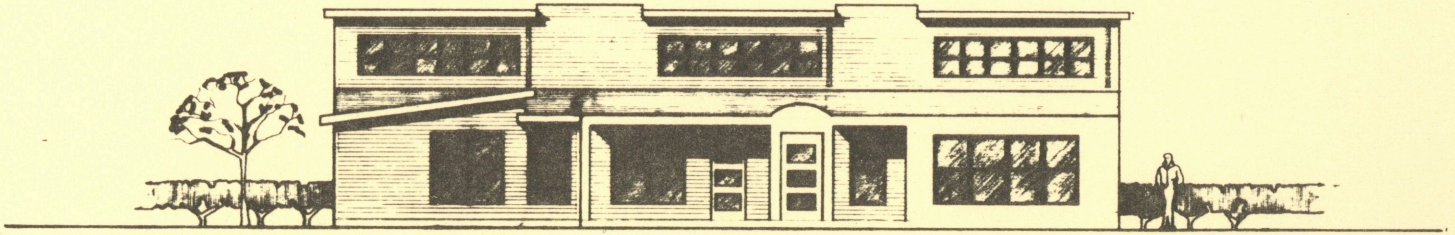
plan



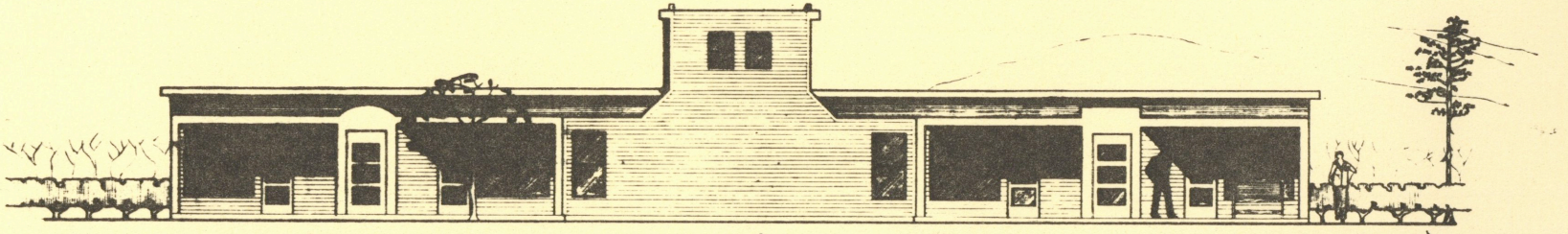




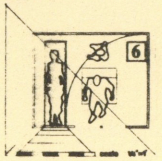
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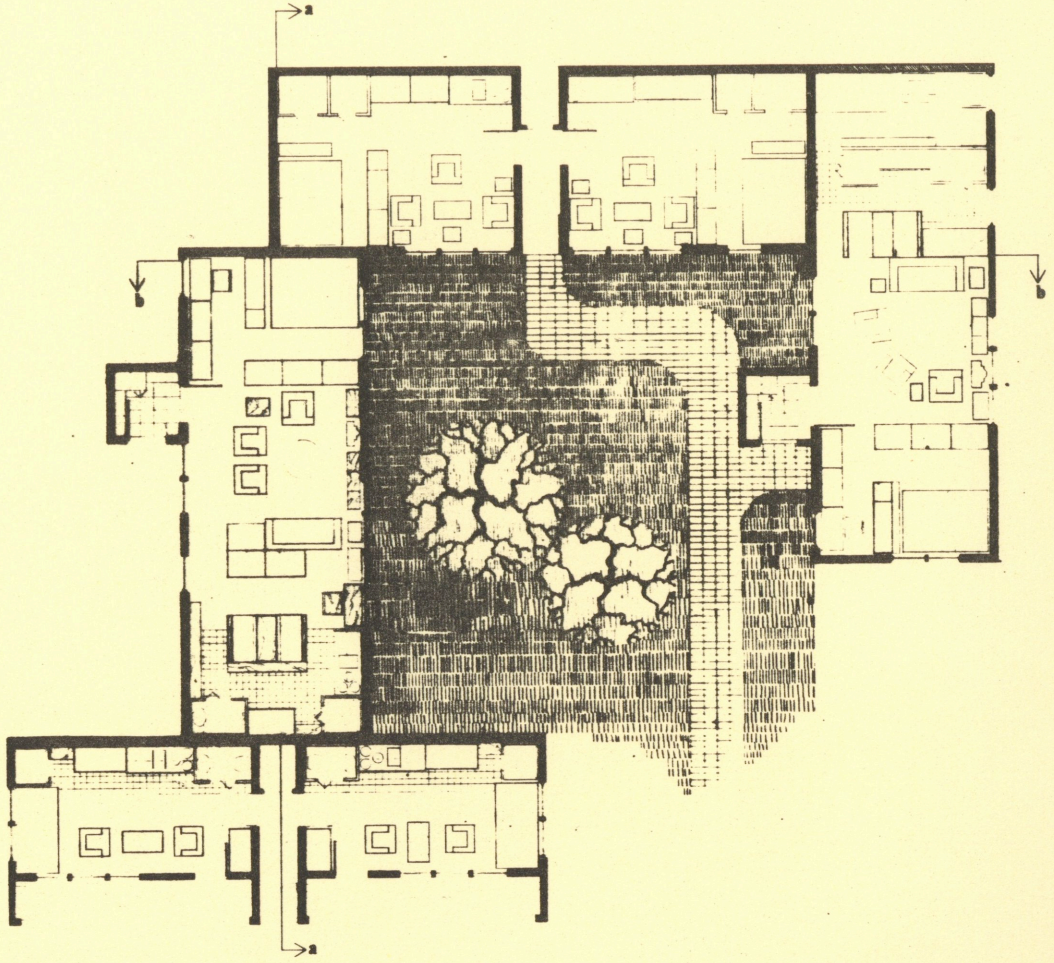
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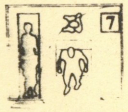


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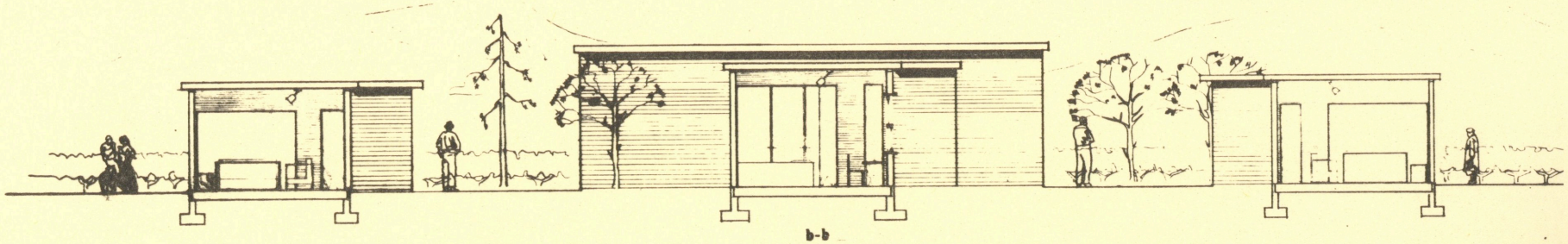


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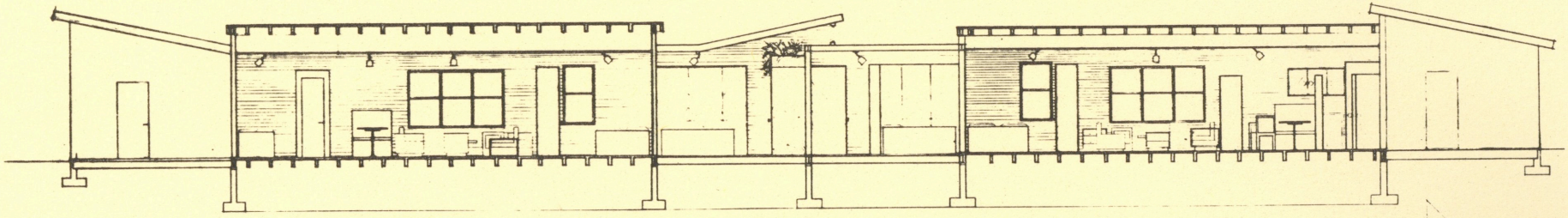




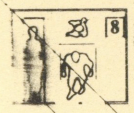
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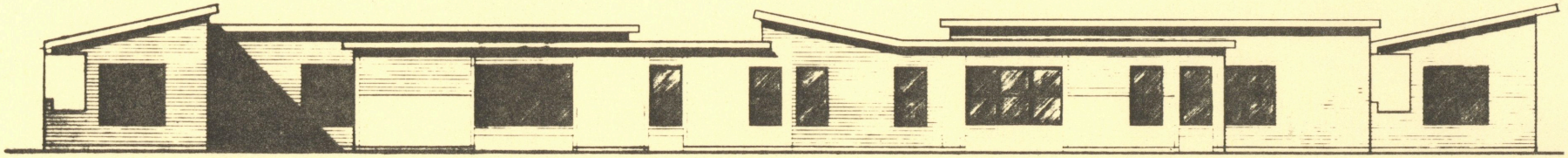
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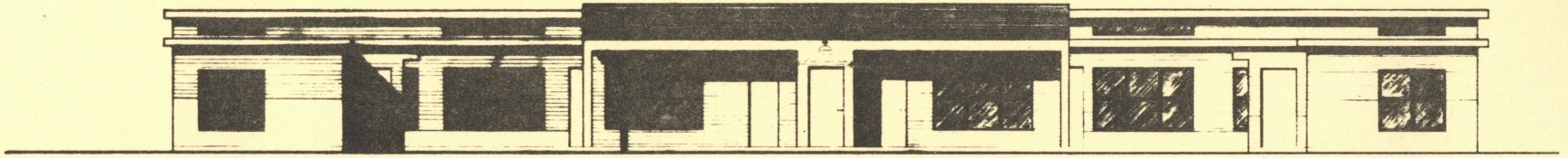
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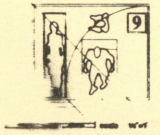
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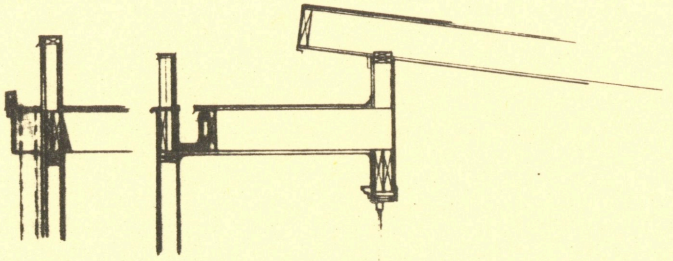
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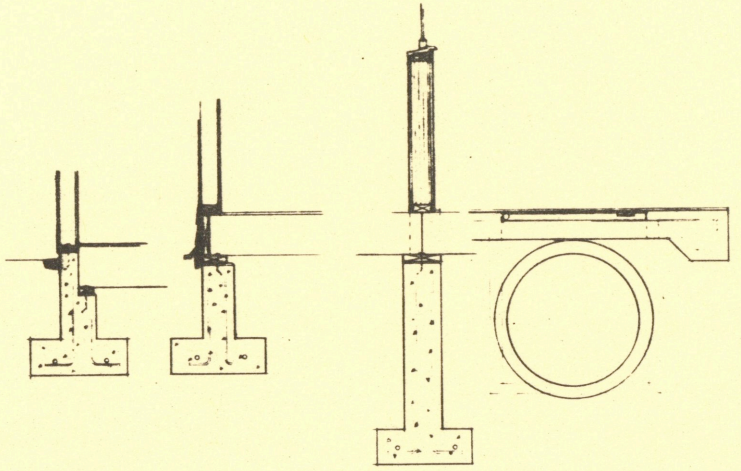


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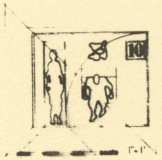


elevation





Details



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