

ARCHITECT and OWNER-BUILDER
An Approach to Designing for
A Synergetic Building Process

by

Robert J. Osten Jr.
Bachelor of Arts, Harvard College
1970

submitted in partial fulfillment of the requirements
for the degree Master of Architecture
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Signature of Author

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Archives



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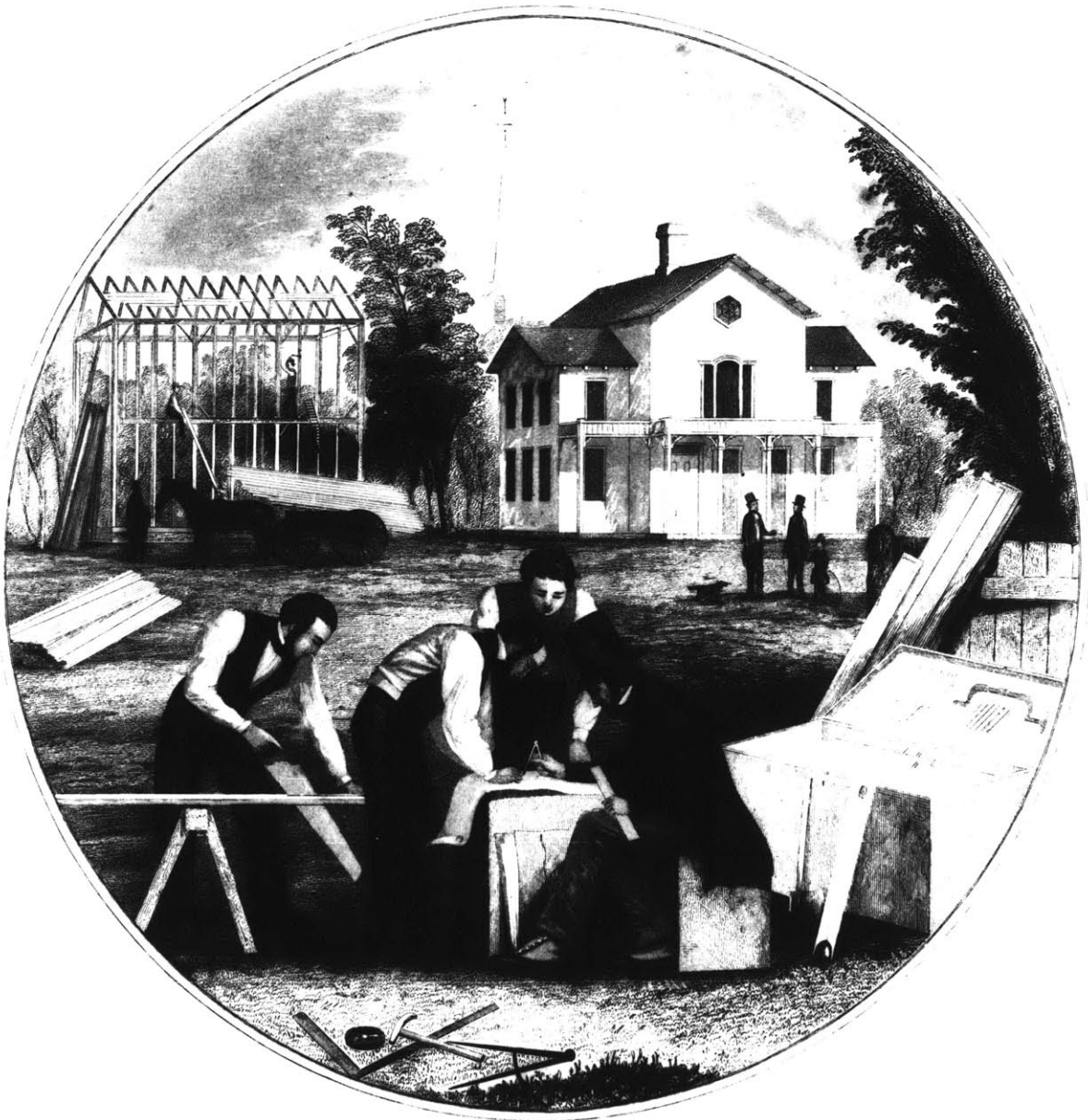
Summary

An attempt is made to develop a modern equivalent of traditional
building processes where individuals worked on their own homes using
clearly understood building methods in an informing and supportive
context. This attempt involves both the outline of a vocabulary of
building "parts" and an initial effort to design a supportive physical
context or "framework" in which those parts are used.

Thesis Supervisor: _____

Title: Maurice K. Smith
Professor Of Architecture





W. Wilson Eng. & Print. Boston.

BOSTON,
DAYTON & WENTWORTH,
1855.

F
2D

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INTRODUCTION

Every inhabiter is in some significant sense a "builder". The moment we move in our furniture, change a lampshade, or hang a picture we are contributing to the ongoing physical assemblage we call our "house" (or "room", or "apartment", etc.). As participants in the process of assemblage we are builders, whether or not we think of ourselves in this way, and insofar as we make decisions about our participation we are "designers". If this perspective seems to be stretching a point, it is probably because the norm for our culture has gone to such an extreme of limited participation by actual "owners" or "inhabiters" in the total building process that we can often forget we are part of it at all.

If there are limits to an architect's time and to his understanding, we might argue that a less extensive (or intensive) range of decision-making is appropriate for him, at least as far as the design of dwelling-places is concerned. If his particular expertise can be applied in a limited, "partial" way, allowing for addition if not completion by others, the resulting forms may well be richer and more appropriate as well as less time-consuming or expensive to "design".

A basic intuition of this thesis is that many forces today favor a move toward greater and more explicit participation by owners or inhabiters as builders (and also, "designers"). This premise implies a need to explore ways of designing and building which through partial (incomplete) decisions and partial building allow life to subsequent processes, and thus a greater economy and richness to the whole. If architects can recognize individual building processes and levels of decision-making as partial

within their own working method, they should be able to find ways to make their entire personal role in the building process similarly partial, allowing lively contributions by subsequent processes beyond their direct control. At the same time, those partial decisions the architect does make need to survive, and not be wiped out by ensuing additions or changes.

The need is to make "key" decisions which are strong but incomplete, in the face of often inadequate information about "ultimate" uses or users, and to find ways of making these decisions in built, physical form. Other processes, other energies, other people can then work with and around these initial built decisions to bring the whole form to a state of greater resolution and usefulness. Thus the specific physical forms ("buildings", "houses") which result are influenced but not determined by the initial designer and his "key" decisions. The basic notion is that the architect, rather than designing a complete, finished form or building, might attempt to achieve desirable qualities of form by designing, initiating, and working with a building process, one beyond his complete control. This thesis is an attempt at a first, rough, sketch of what one such process might look like.

In exploring such a "co-operative", "additive", or "synergetic" process, several key issues emerge. First, what are the particular forces involved, actors, energies, powers, potentials -- and how can they be used positively for a maximum contribution. Second, the issue of "control" in a broad sense: what are its objectives and how can they best be achieved? The objective of designer control would seem, in addition to some notions of "efficiency", to be usefulness, coherence, and "harmony". Appendix "A"

describes the fuseki design method used by Japanese gardeners. It attempts to come to terms with the paradoxical need to exercise some control, make some specific decisions, while simultaneously allowing life to later decisions and processes, and in fact profiting from the richness they can appropriately provide. The gardener's "trump stones" are just the kind of specific, physical, "key decision" we are looking for. They are, like many design decisions, made in a situation of inadequate or incomplete information, a situation in which, without being "arbitrary", a decision needs to be made, and in which a reasonable if imperfect decision is better than no decision at all. The partial "key decisions" made in such a situation need to maintain a balance between the two extremes of wiping out lively later variation and of being themselves wiped out by those variations. Theme and variation must both survive. The initial decision must remain strong enough to read in the "additive" or "collaged" form, otherwise they cease to function as a generality.

In more specific terms, initial decisions should probably affect both the method and context for building. That is, they should help the builder with pieces to build with and a "framework", an overall organization, to build within. So we need to look for physical parts, and a larger scale physical context which build partial decisions, generalities we are willing to stick with or repeat.

Although the single-family detached home is more or less the norm for owner builders in the U.S.A., many factors favor a denser archetype. Among these are land costs, energy economies, and the enhanced opportunities for cooperation (pooled skills and buying power, shared facilities and work-

shops, etc.). Thus though a parts-and-framework approach ought to be useful in detached dwellings, the work here has concentrated on a collective form. In terms of the theme-and-variation image, a shared or "multi-family" form lends itself to a straightforward approach: it allows the collective-sized forms and definitions, large, simpler, perhaps repetitive, to set up a basic directional field organization and to make general decisions about zoning, the locations of privacies, and shared uses, etc. This should provide overall coherence or continuity or "theme". The "variations" within this theme then come from more individual decisions of more local extent, built with the help of the parts. This provides an exploration of the possibilities generated by the context, with a greater richness than a controlling designer would be likely to design or a single builder to build. In a way, this kind of process is a compressed model of the evolution of collective forms in dense traditional or pre-modern towns.

If a parts-and-context approach worked, it should extend some of the benefits of skilled design to the large proportion of owner-builders, and even professional builders, who do not or cannot hire professional designers. That is, given a workable context and kit of parts, a designer should be able to act as a consultant to the builder, making a few quick (and cheap) "key decisions" of his own, rather than laboriously working out and specifying every detail of the building. Thus an owner who could not afford to have an ordinary house personally designed for him ought to be able to get what is essentially a "custom" designed house, but a custom house within a collective framework and a collective building "kit". To use a simple analogy, if a house design is looked at as a game, the trad-



ditional architect designs not only the board and the pieces, but all of the moves as well, a complete specification of one playing out of the game. We are trying to design a board and pieces which make a good enough game to let the individual builder play it out himself, with his personal architect acting only as a helpful kibitzer. Results: hopefully not only an extension of skilled design to a wider segment of the built environment, but also a greater richness than would have been generated by total designer control...

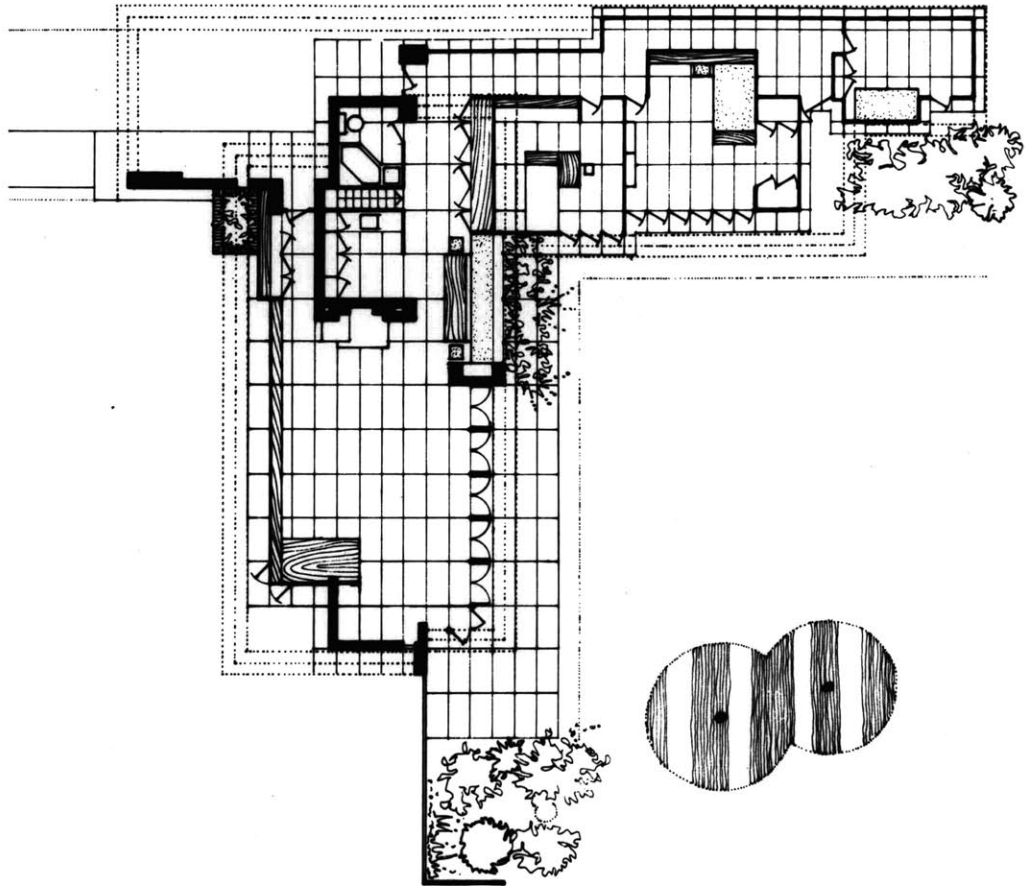


PARTS

"The overwhelming undertaking of constructing a wall was eliminated by the brick. People stopped thinking about the wall and how to make it, and thought instead about what they could do with a wall..."

Stephen Gardiner
Evolution of the House

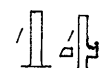
A principal objective of a kit of Parts should be to facilitate a building process so direct, so clearly understood, so technically within grasp as to give the builder not only the ability to build but the confidence to explore possibilities. To do this best, the Part itself needs to say something strong about the ways it can be assembled. While retaining most of the simple graspability of a 2 x 4 or a brick (and their wide range of possibilities from the simple to the complex or sophisticated), the Part should have more particular intrinsic quality, that is it should get the builder further more directly toward a form or use than does, e.g., the 2 x 4 which requires some additional "plan" or structure before it can be built up into a usable form. While retaining the additive, incomplete qualities of simpler pieces, Parts should embody more specific decisions. The Part is a built version of some usefully repeatable decision, specific enough to get you somewhere, but not so specific as to preclude lively variations in use. The repeatable nature of the Part is an important criterion: if the Part's qualities need to be often contradicted or modified in the total assemblage, chances are it needs redesign or is simply inappropriate. Whether the part is prefabricated in a shop, or on sight, or even built in place, it is still a repeatable set of decisions which end up in a specific built physical form. (Wright used similarly



Clients: Mr. and Mrs. Herbert Jacobs
Profession: Journalist, author
Location: Madison, Wisconsin
Year of design: 1936
Best source: *Architectural Forum*, January 1938; Henry Russell Hitchcock, *In the Nature of Materials*
Builder/supervisor: Taliesin Fellowship
Cost: \$5,500
Floor area: 1,340 sq ft; 124.5 sq m

repeated "built decisions", even though the specific forms varied somewhat, in his Usonian houses: the rock-like masonry mass defining the kitchen and including the fireplace is an example.) Another criterion for Parts is "reference-ability": if extensions or adaptations of some architecturally familiar form, they will be appreciated more readily and can benefit from historical use-adaptations of that form. (This is, or was, a cultural norm in many societies, for example in traditional Japanese house-building, where building methods were so specific and so clearly understood as to make architects unnecessary.) As a third criterion, Parts should generally be themselves three-dimensional; that is, although designed for addition or combination they will not depend on such addition for three-dimensionality. Through their own three-dimensional quality they should encourage a spatial approach to the assemblage process.

Whether prefabricated or built on site, Parts should be themselves made at an appropriately hands-on technological level. If prefabricated, they offer an opportunity to exploit the readily available production potential of small shops. Parts which can be made in small local workshops begin to get around the difficulties of larger scale traditional "industrialized housing" processes: 1). high capital investment versus market fluctuations and down time, 2). inventory storage, 3). transportation costs and distance limits. Small woodworking and cabinet shops could easily switch back and forth from Parts production to their normal business, producing on demand rather than for inventory. They are locally distributed, flexible in production, and low in capital investment. They represent an important existing mechanized, repetitive production capability which is



generally underutilized in economically slow times. Use of Parts could bring this resource to bear in homebuilding.

Slack

Often in traditional masonry wall construction the corners and openings are built strongly and carefully, while the rest of the wall is filled in with a "looser" mass of masonry units or rubble. This "looser" or less specific infill is a good example of what might be called a "slack" building method. Slack forms an important complement to the Parts in our building kit. The pieces or Parts have specific form and dimensions which are retained in the assemblage; slack takes up the differences between these, making it possible to achieve continuous closure without cutting and fitting. This is one important distinction between the building method proposed here and a building system. Slack and sliding overlaps should eliminate the necessity for precise dimensioning and fitting of Parts. As opposed to a "tight" system, this should allow freedom in both the type and the positioning of specific pieces used. The opportunity is left open for other building pieces, not foreseen as part of the original kit, to become part of the assemblage as well. Where most building systems are tight and exclusive, the assemblage process proposed here is loose and inclusive.

Standard stud wall construction and some fixed glazing (e.g. with easily worked plastic lights) are here considered to be "slack" building methods. Any cutting or fitting needed for continuity will happen within these methods.

Parts are used to make special local conditions or places as key

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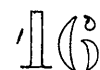
definitions. Slack completes the closure wherever needed.

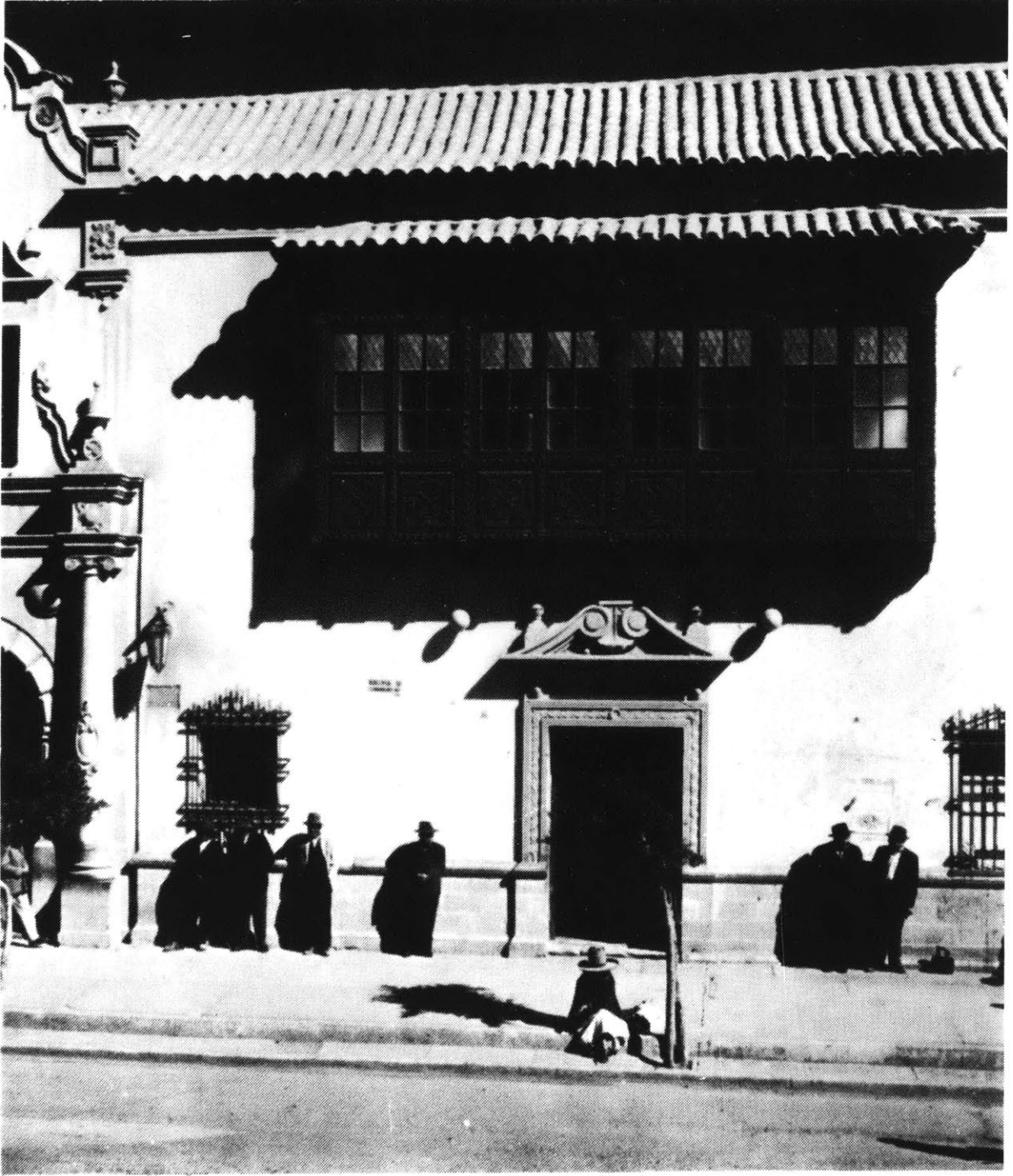
Specific Parts

The few specific Parts detailed here are included as illustrative or exemplary, and are far from an exhaustive or definitive kit. Possibilities, variations, and historical "references" are practically endless, and a "catalog" of them would be monumental. Nevertheless, really useful Parts must fall within a carefully regulated range: if too specific, they are not generally applicable, and if not specific enough they are not helpful. A few representative types:

"Three-dimensional Windows"-- (refer to pages 17-19). These provide a way of building up a three--dimensional glazing screen. They are variations of a simple boxlike frame which accepts commonly available sash or may be partially infilled (or left as an open framework). The "windows" are intended as additive pieces: they are individually simple, complexity builds up through their combination. Their size range extends from the smallest usable "bay window" up to small room size; the larger variety will need extra support such as that from knee braces, exterior posts and beams, etc. Whether used very simply, or combined into more articulated forms, they are non-cellular. That is, they should always generate continuous, interlocking places or spaces, never "blisters" on another space, as in the case of most "bay windows".

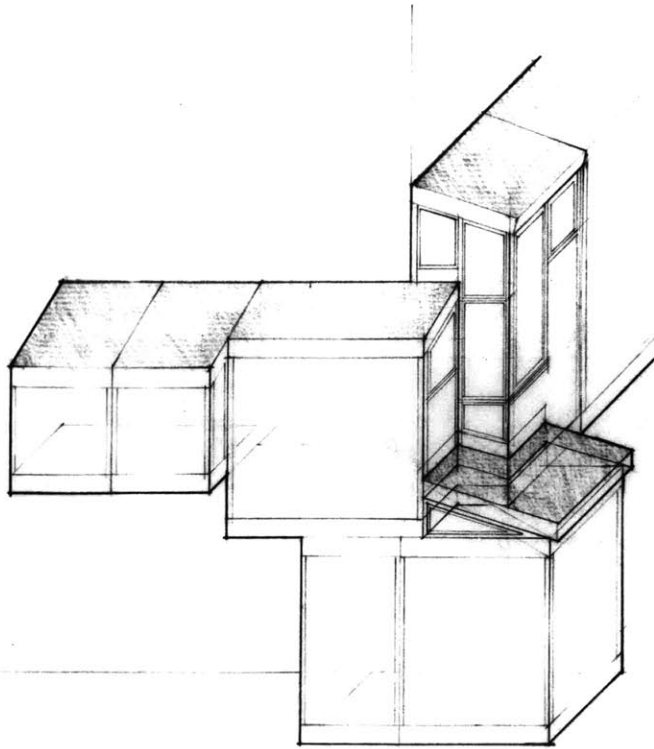
Variations should include both flat-roofed and integral pitched--roofed types. Flat--roofed models offer the option of adding pitched roofs where needed, or of extending the flat roof to a use--surface such as







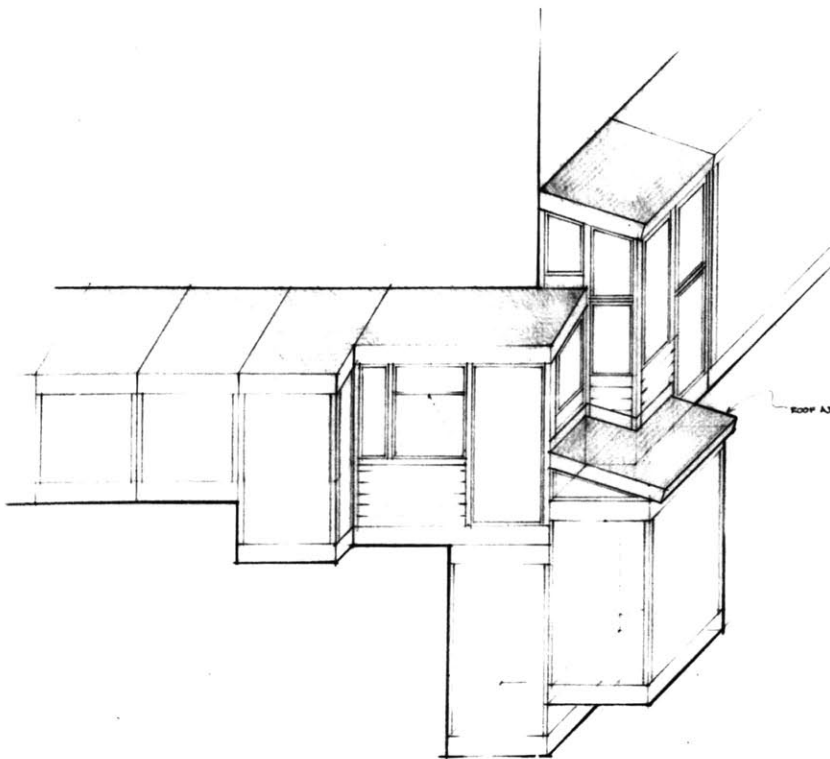
297-298. Valletta. Pereira palace (c. 1600).



CORNER ASSEMBLAGE
 LESS CONTINUITY, MORE AD HOC,
 SEVERAL DIMENSIONS CHANGE AT
 ONCE.

1/25/70

3D WINDOWS
 UNIT COMBINATIONS



ROOF ADDED

MORE CONTINUOUS CORNER
ASSEMBLAGE: LOOSER SLIPPING
ALLOWED IN THE ACTUAL ZONE
OF THE DIRECTION CHANGE.

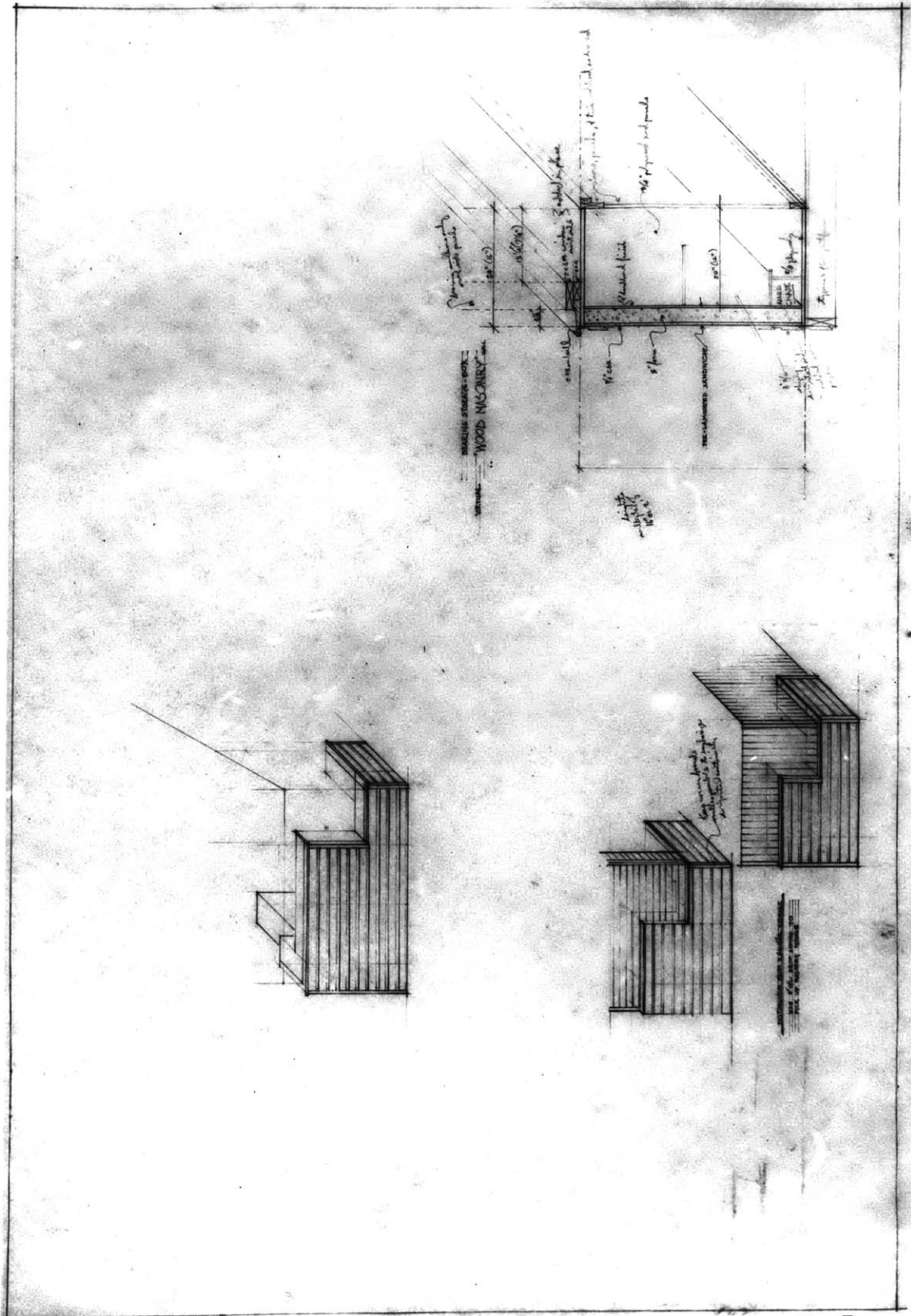
- delayed attention to plan and section of the corner region.
- a response to formal constraints.



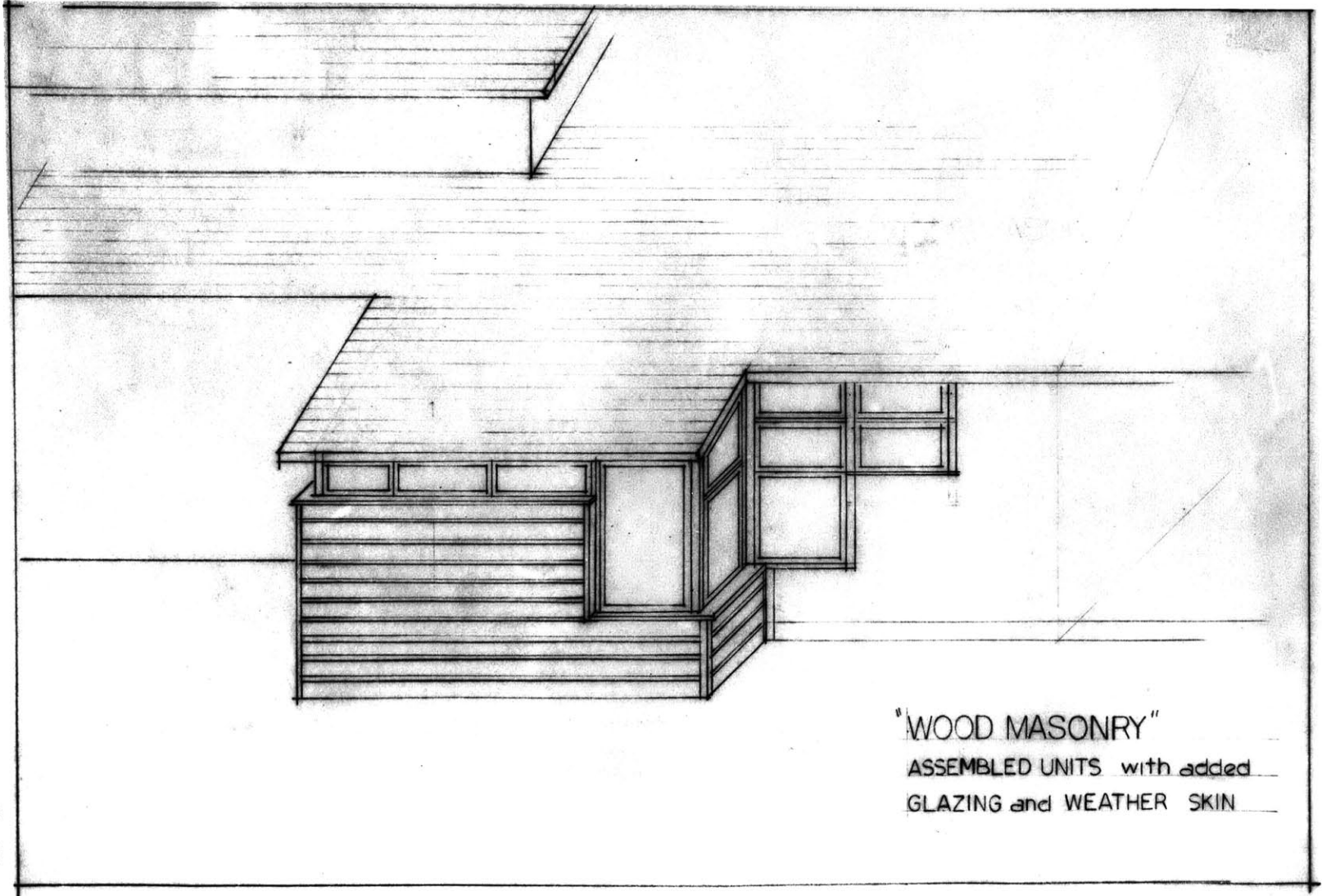
a deck. If the weather closure is not coincident with the framework, they may add to form porches, "loggia", etc. A particular variety with glazed roof becomes a "greenhouse". Models with other geometries, for example 45° to the orthographic, can help with a change of direction or extend the territory of a corner.

"Wood-Masonry"-- (refer to pages 21,22). These Parts are an attempt to offer a way of building a wooden wall which has some of the presence and dimension (three-dimensionality) of a heavy masonry wall. Also boxlike, they add differently from the three-dimensional windows: since their reference is to a masonry wall, they add more continuously, with fewer jogs or changes in direction or dimension. If used as exterior closure, they are covered with a continuous weather skin (e.g. bevel siding) to emphasize this continuity. As well as building a wall with useful depth, as closets, storage cabinets, desks, bookcases, or utility chases, they offer improved thermal and acoustic isolation. Sizes run in convenient 8" multiples, since they are made from plywood or sandwich panels, within a range handleable by two men. Depths run generally 16" or 24", lengths 2' or 4'.

"Two-dimensional windows"-- (refer to pages 23,24). These are an example of a part which is most likely to be built in place, and is thus primarily a design tool. Their value is in making some consistent decisions, e.g. about reference heights and light sizes, which should add coherence by building up into a recognizable generality at the scale of a whole "house" or collective building. With the three dimensional windows, "slack" glazing, and other particular "found" windows they combine to form



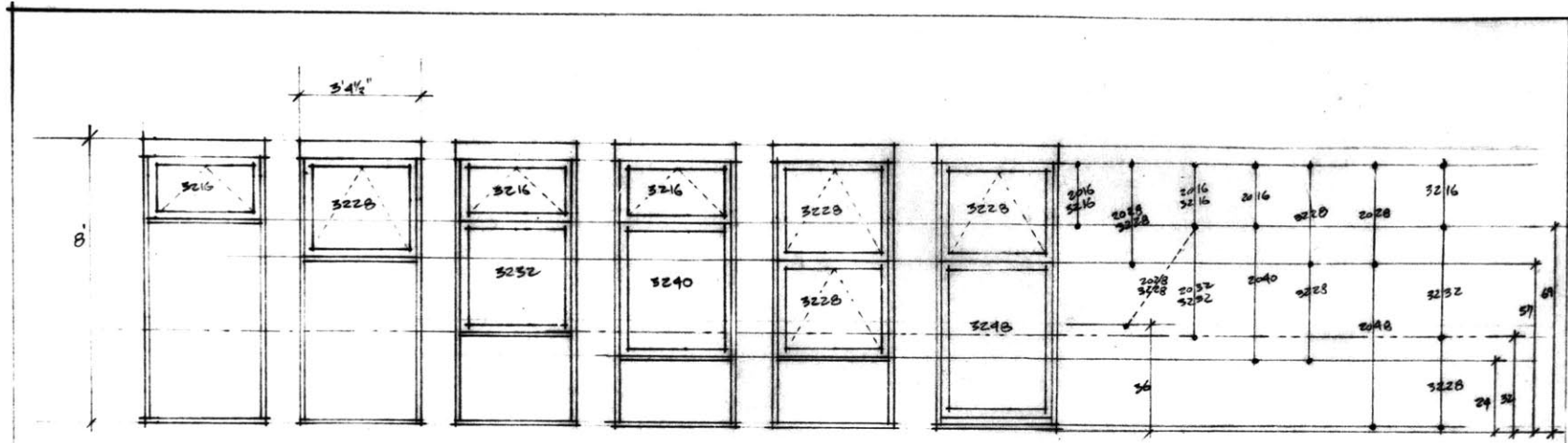
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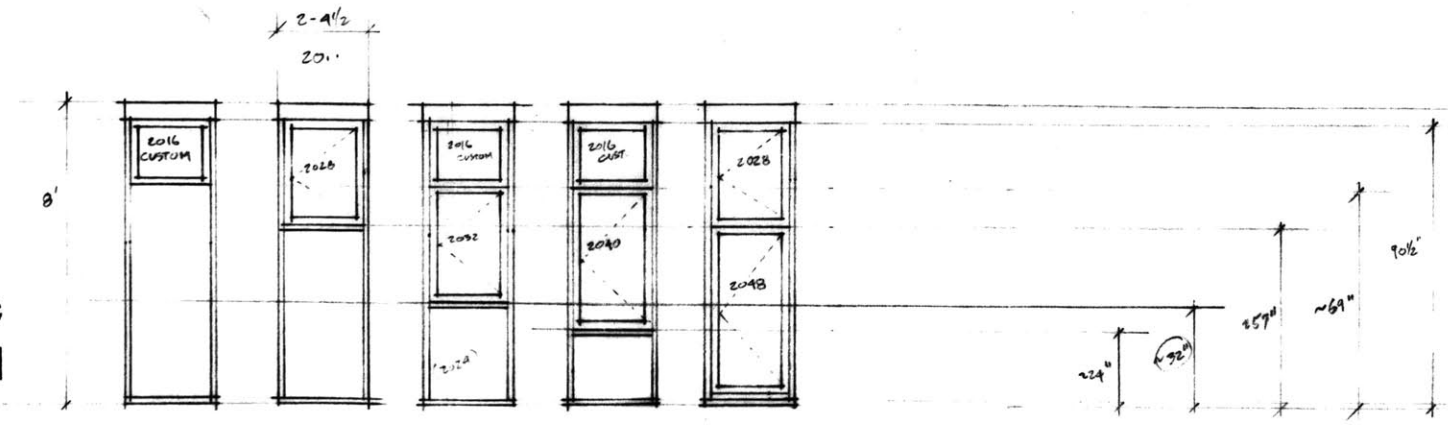
"WOOD MASONRY"
ASSEMBLED UNITS with added
GLAZING and WEATHER SKIN

ES

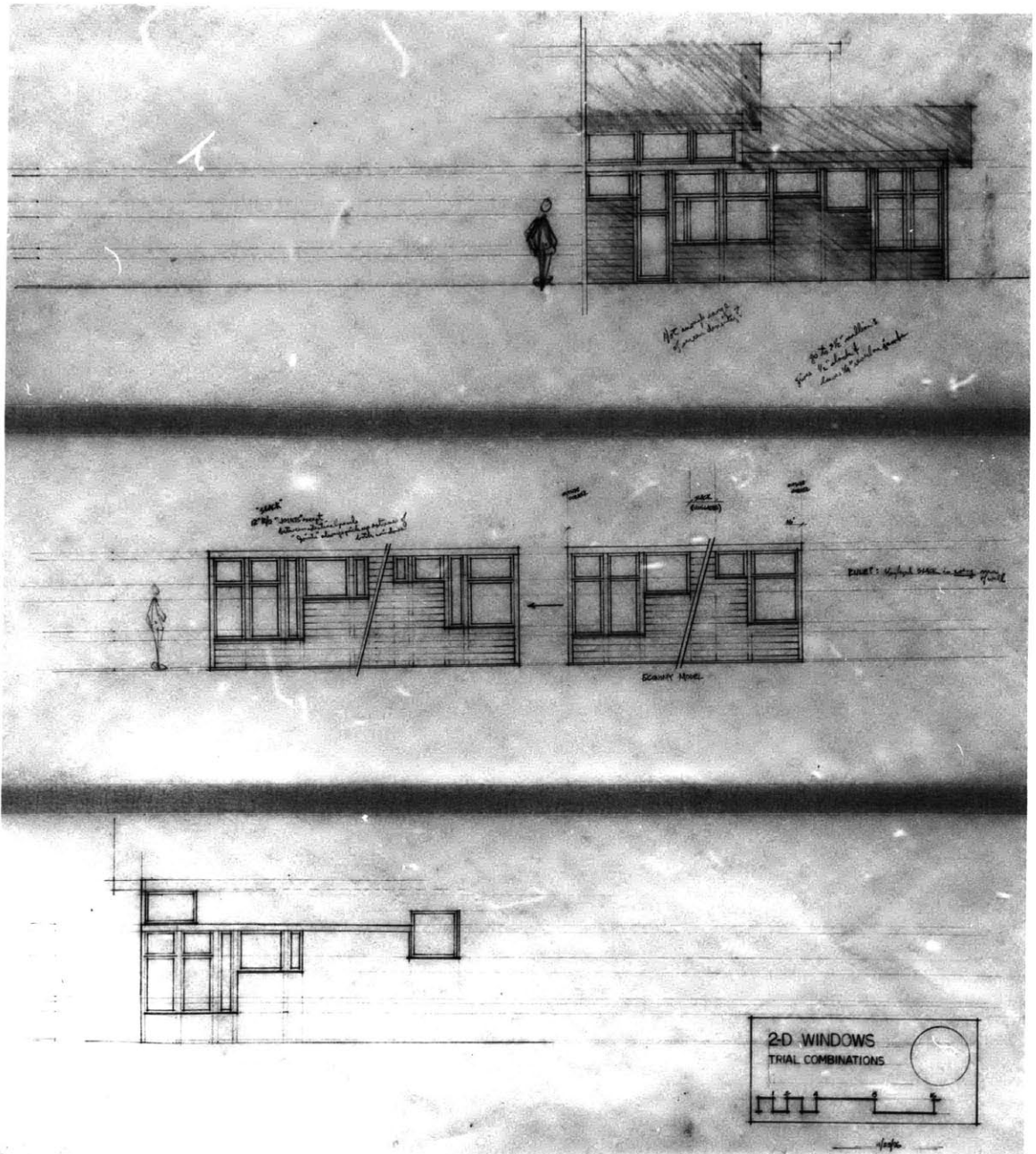
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2-D WINDOWS
 BASIC UNITS and
 REFERENCE HEIGHTS



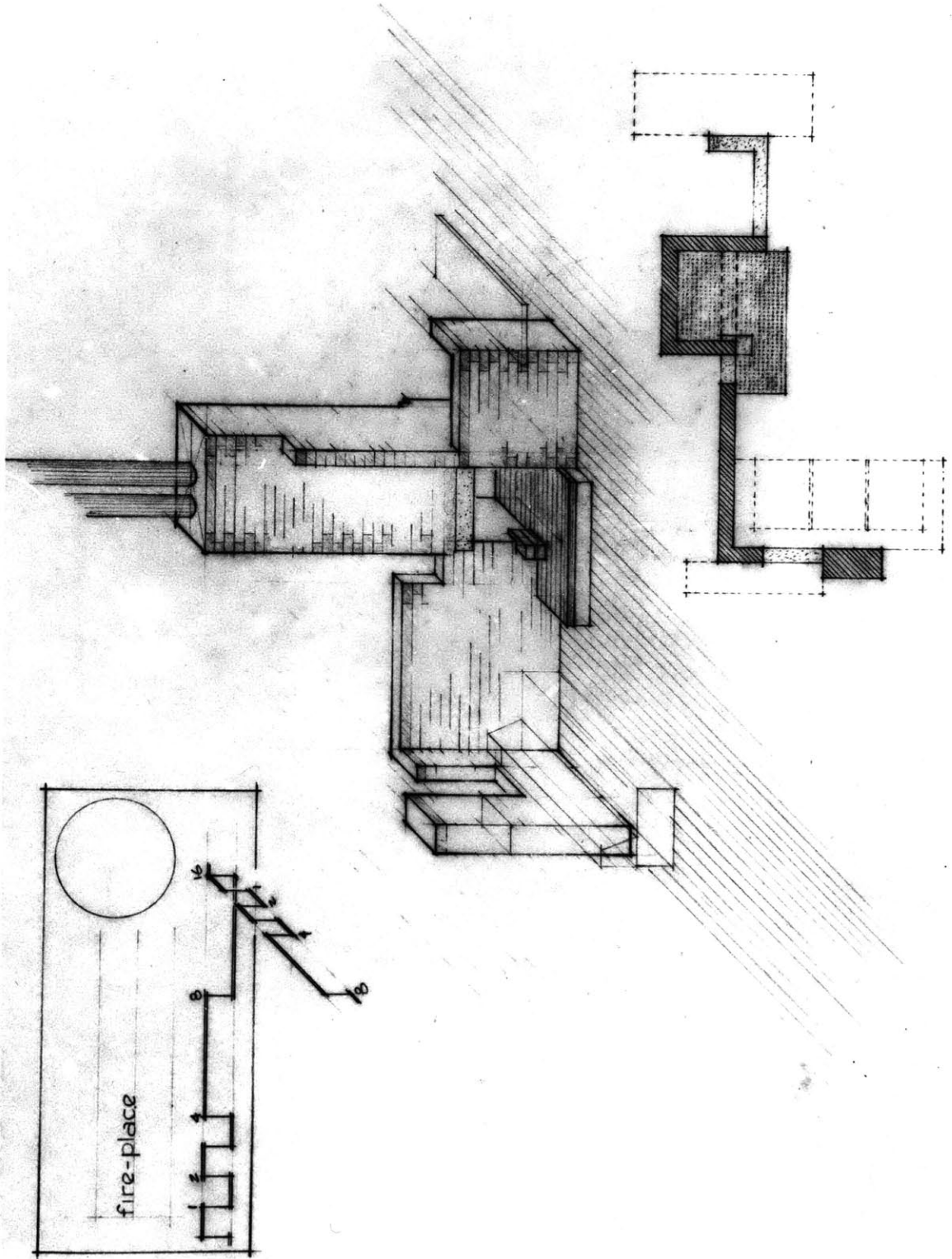
2D



the overall glazing screen vocabulary.

"Fireplace"-- (refer to page 26). At the more specific or particular (less additive) end of the Parts spectrum, we might find a few parts which have relatively definite associated uses and which might occur singly rather than in combinations. The "fire-place" illustrated might take its reference from the old "inglenook". It builds the decision that there should be a strongly defined, occupiable zone adjacent to the fire itself, and builds it with specific form and size (a variety should be offered). Likely to be built in place, it might nevertheless promote economies through repetition in a collective context.

This limited sample hopefully sketches the rough Parts range, from the "loose" or "flexible" to the very specific, which seems to be most useful.



CONTEXT

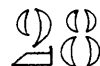
Complementing the Parts, which provide a manageable and understandable building method, is some Context in which to use that building method. The context represents, as physically and concretely as possible, "key decisions" about form and organization at the larger or collective scale. Without it, the builder is in the position of having to define or generate the larger form-continuities with the smaller building methods. While this can be done, in an ad hoc multi-family "owner-builder" situation the context provides needed support. In addition to making partial organizational decisions at collective scale, the built context needs to be rich enough to "inspire", to suggest possibilities, to work from or with, and if necessary to stand reasonably "on its own" in the case of unimaginative or simplistic completions by smaller scale building methods. In this sense it functions as a good natural "site", enabling later building to grow with it. Without being arbitrary, it needs to encourage builders to work imaginatively and three-dimensionally, spatially.

Several factors favored the selection of "row houses" as the organizational prototype. Given the situation of independent individual builders, contemporary Americans, working at an aggregation of private dwellings, the prototype needed to be clearly understandable, preferably something not too unfamiliar. It needed to provide simply and clearly a recognizable piece of owned personal territory. To allow flexible building form and simple possibilities for expansion, as well as for psychological reasons, it seemed desirable to include some real ground as part of each of these territories. It seemed more appropriate to allow the complexities of

interlocking privacies in section to evolve with later processes rather than be designed into the original framework or context. This meant the initial organization would deal with territorial divisions principally in plan. The "row house" model seemed to satisfy all these conditions, while providing adequate density, reasonable privacy and exposure, etc.

The "row house" should be taken as a point of departure and not as a stereotype. (The conventional notion of "party wall", for example, might become a trap.) With this in mind, three goals for variation or "improvement" within the row house prototype were established. First, to get more mileage out of "party walls", more definition, more character, more use. Second, to increase the proportion of edges exposed to air, light and view. Third, to provide greater "flexibility", a wider range of variation in the way the basic organization could actually be used, a nonsingular use-pattern. This means allowing life and independence to subsequent levels of decision-making or building.

To partially define a context based on the row house prototype, several factors were chosen to work with. In our social context, the private territories needed to be clearly defined and, eventually, physically separated to some extent. This favored designing and building some discontinuities in the context, meaning basically the "party walls" and "lot lines". Zoning of public or shared uses as well as design of access or distribution (pedestrian and vehicular) would help provide a network or organization at site scale or larger, as well as special local conditions. Ground form and patterns of vegetation would contribute to this



end. Some actual load-bearing structure or framework needed to be included to simplify building and get things started, as a direct and emphatic way of expressing some three-dimensional possibilities. Utility "cores" were included, as a practical consideration but also as a partial organizational decision at house scale and a recognizably repeated form giving coherence and a size reference at the collective scale.

As a general principle, these key factors were organized as much as possible as overlapping or interlocking fields, none completely controlled or contained by any other.

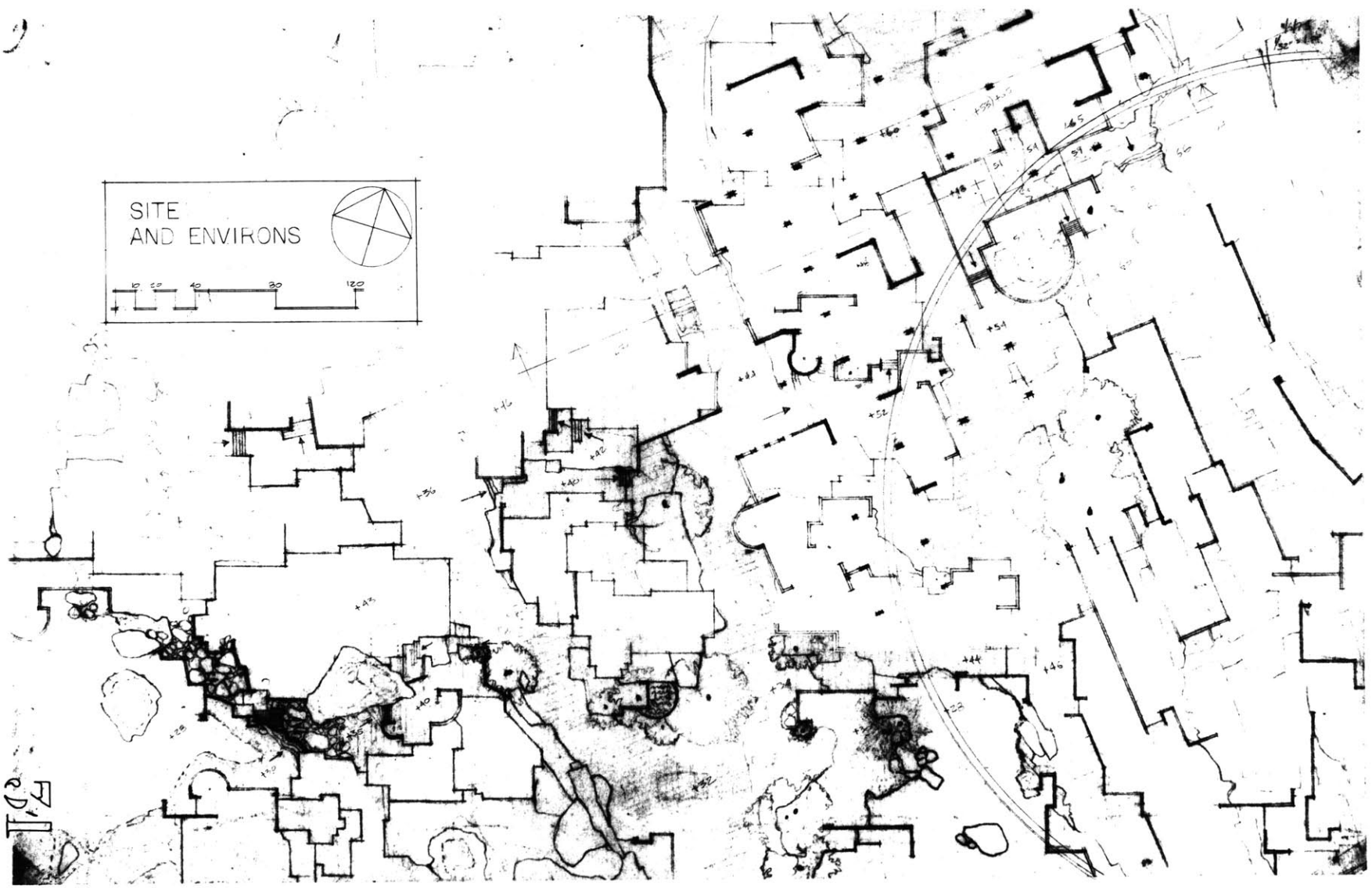


SITE

The site and environs are shown on page 31. The entire site itself is designed as opposed to real; it was generated as part of a previous studio exercise. It was chosen because it avoided particular site issues + constraints not appropriate for a general exploration, because it was rich and varied enough to work from, and because it was adequately documented and I knew it well. It represents part of a dense but small town of several thousand population. The land slopes generally southwest, with views in that direction to an inlet and a bay. Some ledge and some man-made terracing already existed on the site as shown. To the west of the particular building site is a small public plaza, bordered on the west by mixed commercial and residential uses. Vehicular access is from the north, generally following the contour, and pedestrian paths cut across the contours, running NE - SW. A few hundred feet NW of the site is a fairly concentrated commercial center for the town.

9.

SITE
AND ENVIRONS



7/11

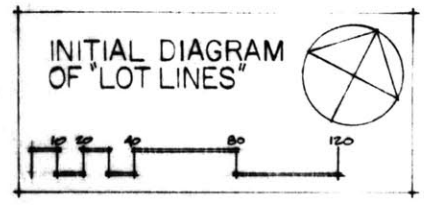
TERRITORIES

A basic tool or variable in the definition of the larger context was the zoning of private territories or "lots". Page 33 shows the initial organization adopted. These territories come from the basic familiar reference of ordinary building lots. As mentioned before, a decision was made to let each private three-dimensional territory extrude in section from its definition in plan, at least for a beginning, as is common practice. In addition to providing a clear notion of territories available for purchase, sale, and use, this initial diagram tries to provide a strong, clear organization at site scale, a "theme" for later variation.

Specifically, these "lots" range in width from 20 - 30 feet, and in length from 60 - 100 feet. The general intention was that they would be so large as to guarantee development of a vocabulary of private outdoor spaces, including closed courts. They are "slid" or off-registered to produce a more extensive and articulated edge, to give greater definition to the public territory and more light and air to the privacies.

So far, these are legal rather than actual physical boundaries. An important part of later variation is to provide a legal mechanism for easy change of these boundaries; sales, barter, subdivisions, combinations, etc.

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added



PARTY WALLS

The plan on page 36 shows the beginnings of a context of unit masonry "party walls", the potential built separations discussed before. The walls are articulated or "wiggled" for stability, but also to provide actual definition or enclosure within the zone of the wall and to afford the possibility of spaces which get around the ends, using the whole zone of the wall as a two-sided, three-dimensional form. Some circular geometry is introduced for a different kind of "space" or enclosure.

The walls also include openings, which permit them to be used as other than party-walls. In exterior walls, the openings provide for entries, windows, etc. In exclusively interior, or exclusively exterior, walls, the openings permit movement, and in many cases a spatial continuity, through the field of walls, allowing (especially with larger openings) the walls themselves to be sometimes in the space (or the house, or garden). This is important, particularly because the wall definitions themselves are basically just "wiggly walls", limited in lateral extension. Real lateral extension comes from later additions to the walls and interlockings through or around them. Openings mean the walls need not always be one-sided separations. Where they are in actual "party walls", the openings can be closed off in a variety of ways.

In order to establish some norm or generality to the openings themselves, their sizes as well as the ways they group, a simple vocabulary of precast concrete arches is used (see pp. 37, 38). In a way these arches are a secondary type of "Part", offering coherence, economy, and a reference for the whole Parts--slack notion (Quoins and terminations of the

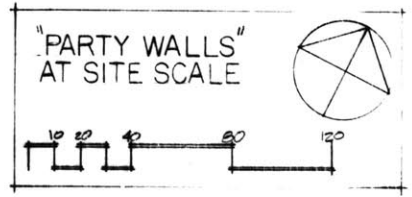
walls, as other key defining elements, are also accented lightly, e.g. with a different size or color of masonry units.) As the section shows, the precast arches include a recessed spandrel which allows for the later filling up of the opening (partially or completely) with rectangular pieces. Other, less particular or object-like openings are also used, brick archways and simple lintels (see pp. 39). In general, these latter are used where the continuous quality of the wall needs to be least disturbed.

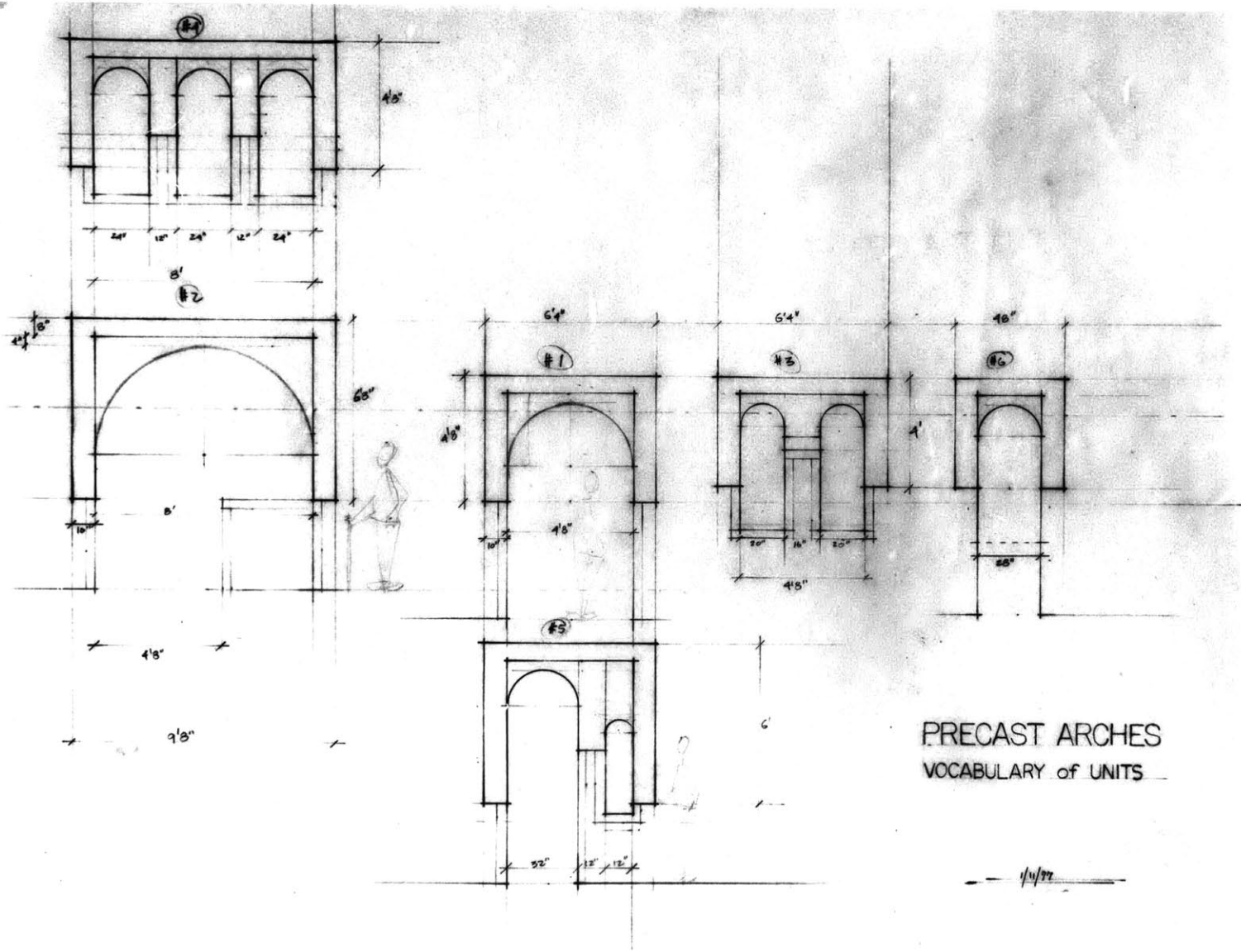
The walls also come to include vertical channels (see pp. 51-54) which are intended as potential "utility cores" or "stacks". These are generally sized large enough to allow some other use if desired. The location of these cores says something about where kitchens and bathrooms might later happen, so they represent a partial organizational decision at unit scale as well. In general, each house or lot will have at least two possible locations for its "core".



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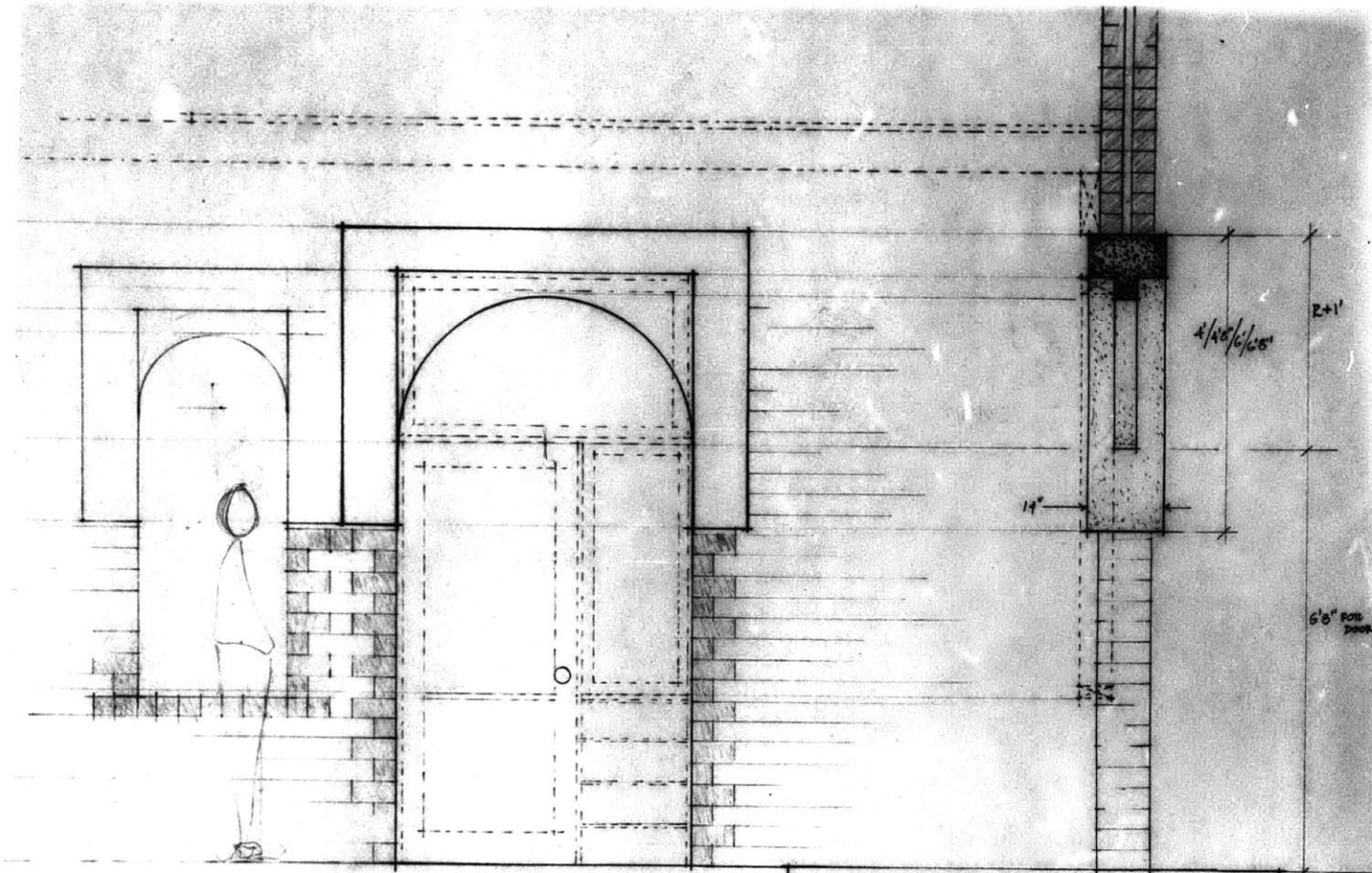




PRECAST ARCHES
VOCABULARY of UNITS

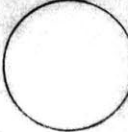

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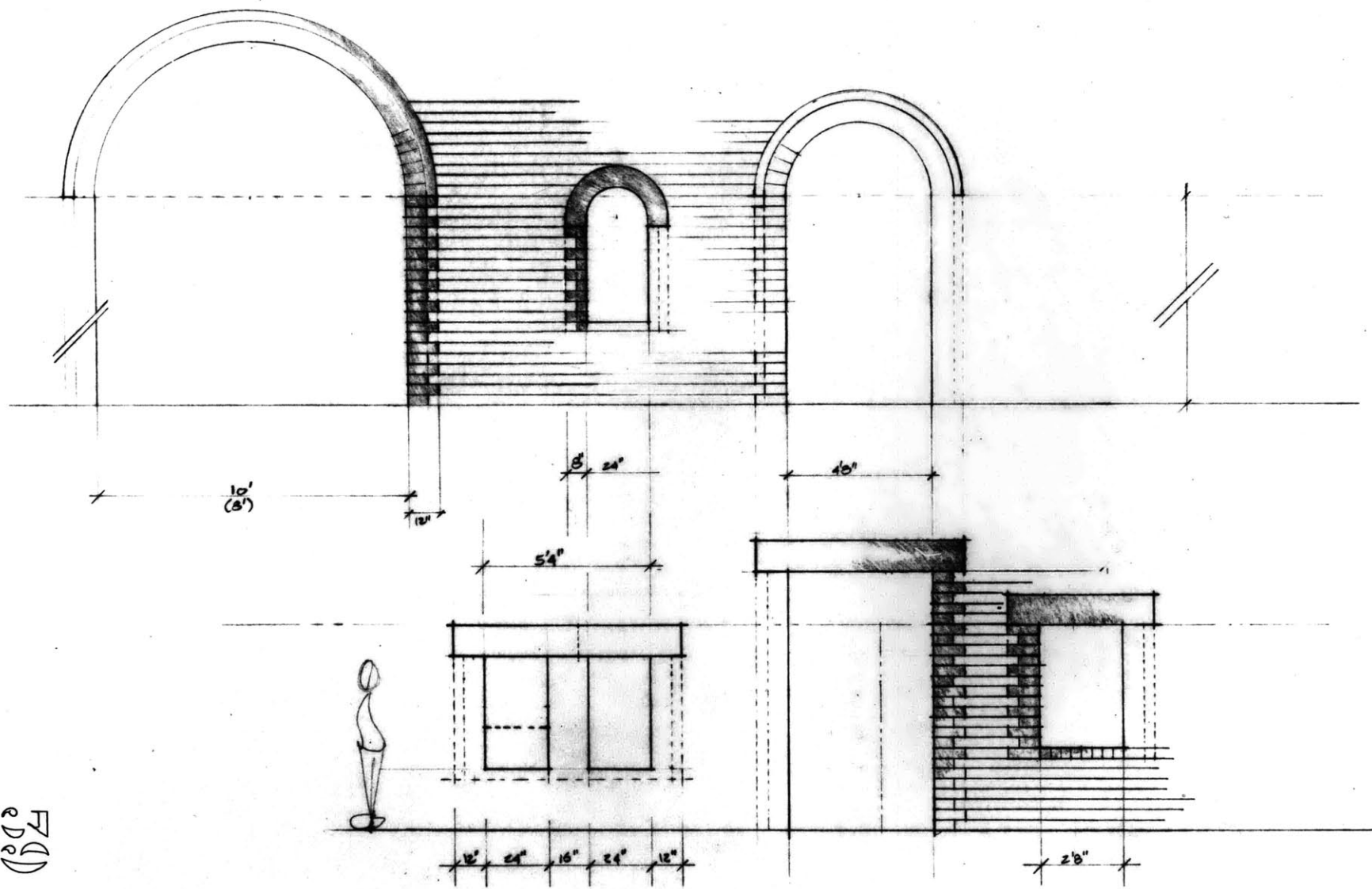
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201



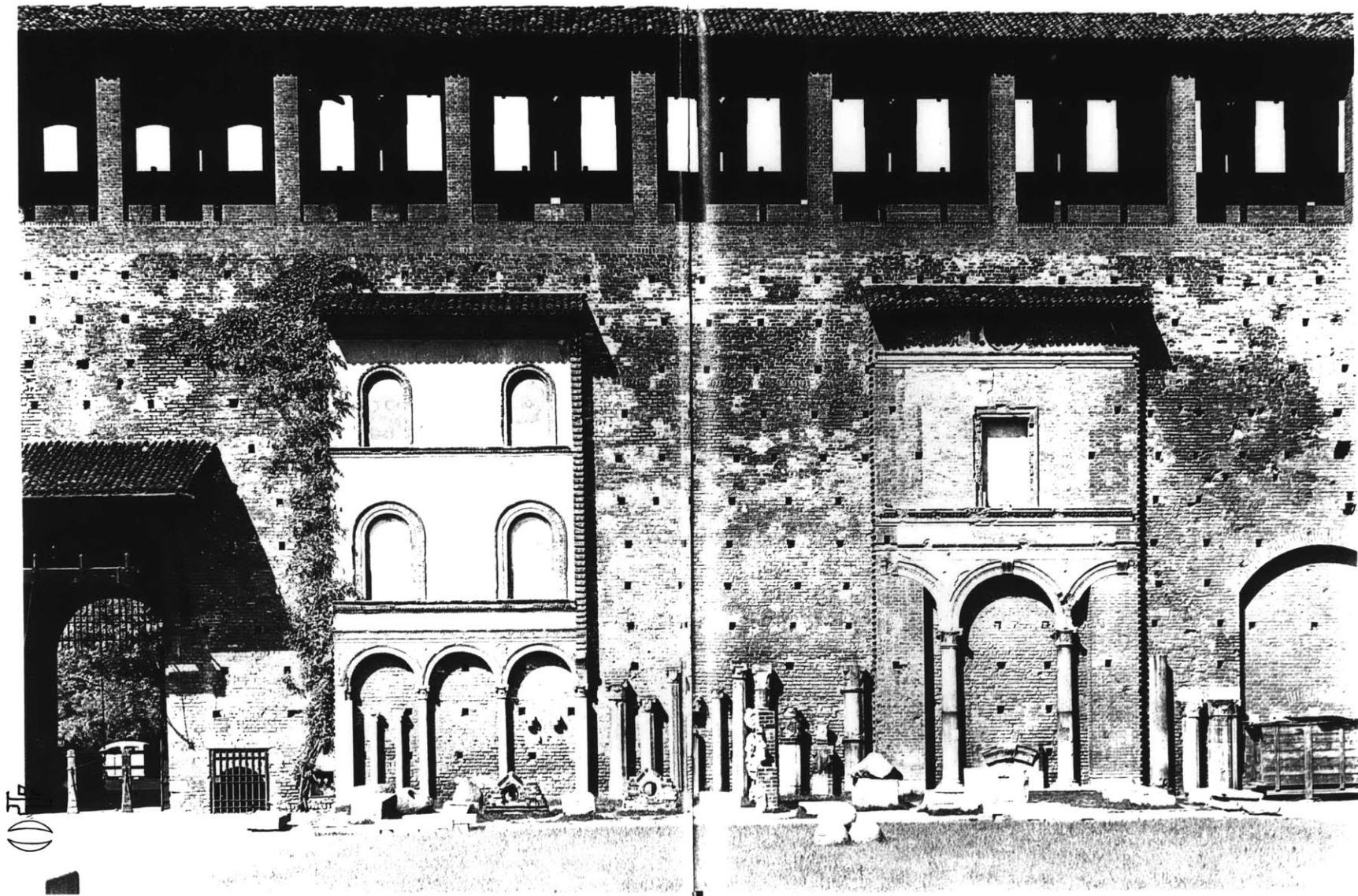
720
220

PRECAST ARCHES
SECTION and
TYPICAL ADDITIONS



FZ(1)
eD(2)



USE SCENARIOS

The off-registering of the "party walls", combined with the openings (potential continuities) and the easy transfer or reorganization of owned buildable territory ("lots"), allows a wide range of possible use-organizations within the basic built context. The simplest such organization is diagrammed on page 44 ; this is the case where the initial pattern of lots is accepted without alteration and each lot contains one private dwelling. The diagrams on pages 45 to 49 represent other possible organizations resulting from some less rigid uses of this initial pattern. Changes in the use-patterns may occur over an extended time (as they have in historical precedents), but the hypothesis here is that major structural changes, such as the closing off of an opening or the constructing of a new section of party wall, will be relatively permanent. This means that considerable variation within the basic context would occur from the very beginning of use or inhabitation. The use variations diagrammed here are based on simple, relatively plausible "scenarios" outlined below. Hopefully they begin to indicate that a much richer set of definitions can result than would come from straightforward adherence to the initial lot diagram. That is, within the built context, later more ad hoc decisions and processes explore and exploit a whole range of possibilities.

Here are a few examples:

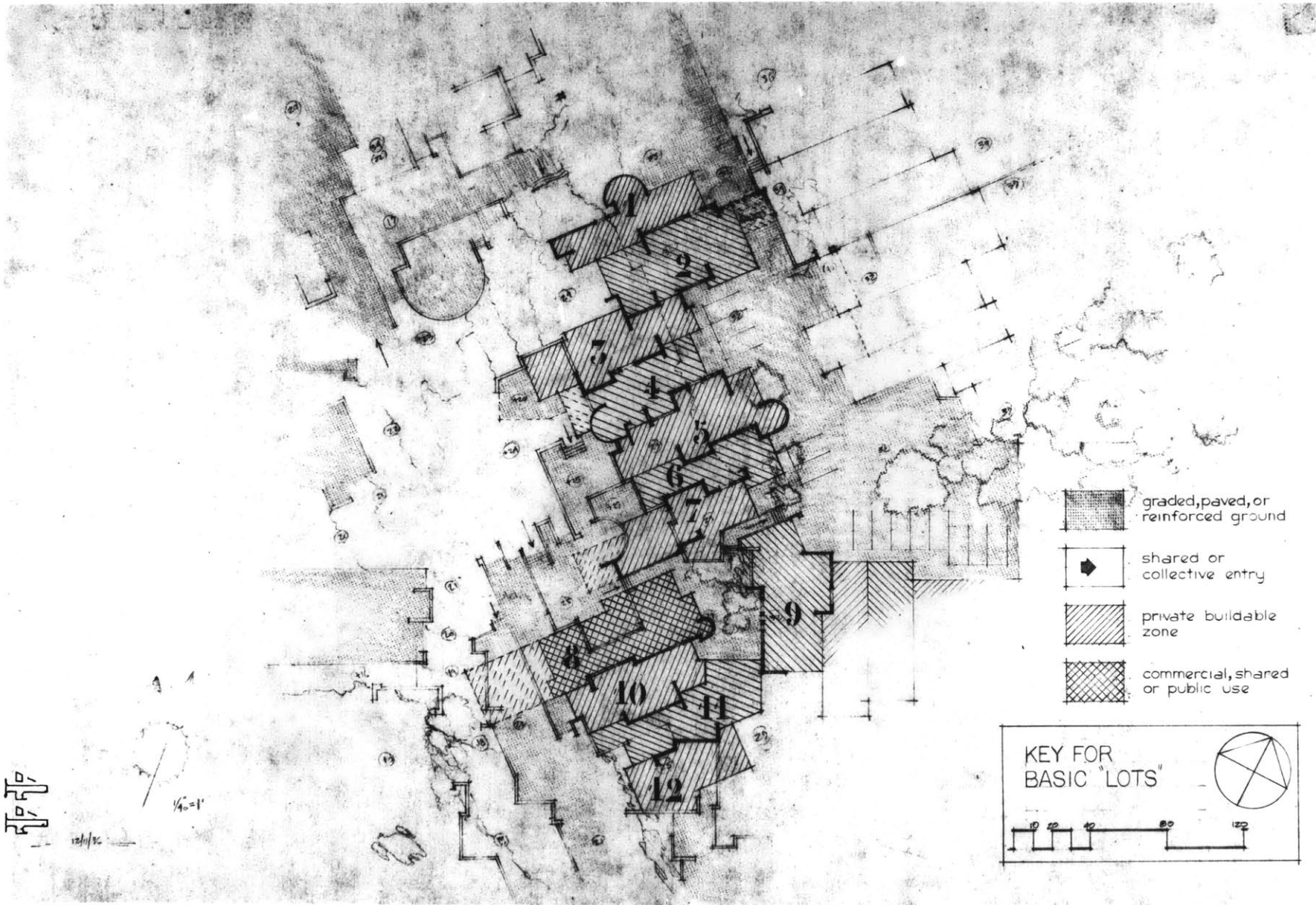
- One family buys one lot, builds one house -- the straightforward case.
- One owner buys 2 lots (or one large lot, builds an interlocking "two-family" house, and rents or sells one unit (Scenario B, lots 3 and 4).
- Two owners buy 2 lots, agree on a rearranged interlocking of their ter-



- territories in plan or in section (Scenario C, lots 6 and 7).
- One lot remains "vacant", and becomes a public or locally shared territory (a garden, a way through, etc.) (Scenario C, lot 1).
 - Two owners buy a single large lot and divide it, building two houses (perhaps separated by a central shared court) (Scenario a, lot 2).
 - A public or commercial use takes over a lot or part of a lot (Scenario C, lot 2, etc.).
 - One owner buys 2 lots, uses one or part of one for a shop, studio, or workshop (Scenario B, lots 5 and 6).
 - An "apartment building" grows within the "row house" framework (Scenario B, lots 8 and 10).
 - A group of neighbors pool territory for a shared use (shared entry, garden, court, etc.) (Several examples).
 - One owner (or a group) surrenders part of his territory for a public use (receiving in exchange payment, tax rebates, variances, extra territory somewhere else, etc.). This allows the public territory to come within the built up zone, to move through the "party walls" themselves, providing a more positive interlocking of public and private zones. (Scenario B, lots 5 and 6).

The possibilities are endless. The hope is that variations from the initial diagram constitute a richer exploration of the built context, allowing a greater interlocking of territories in plan and section, extension of continuities, fuller use of walls, etc. In this way, complexity builds up through use and individual decisions rather than being designed

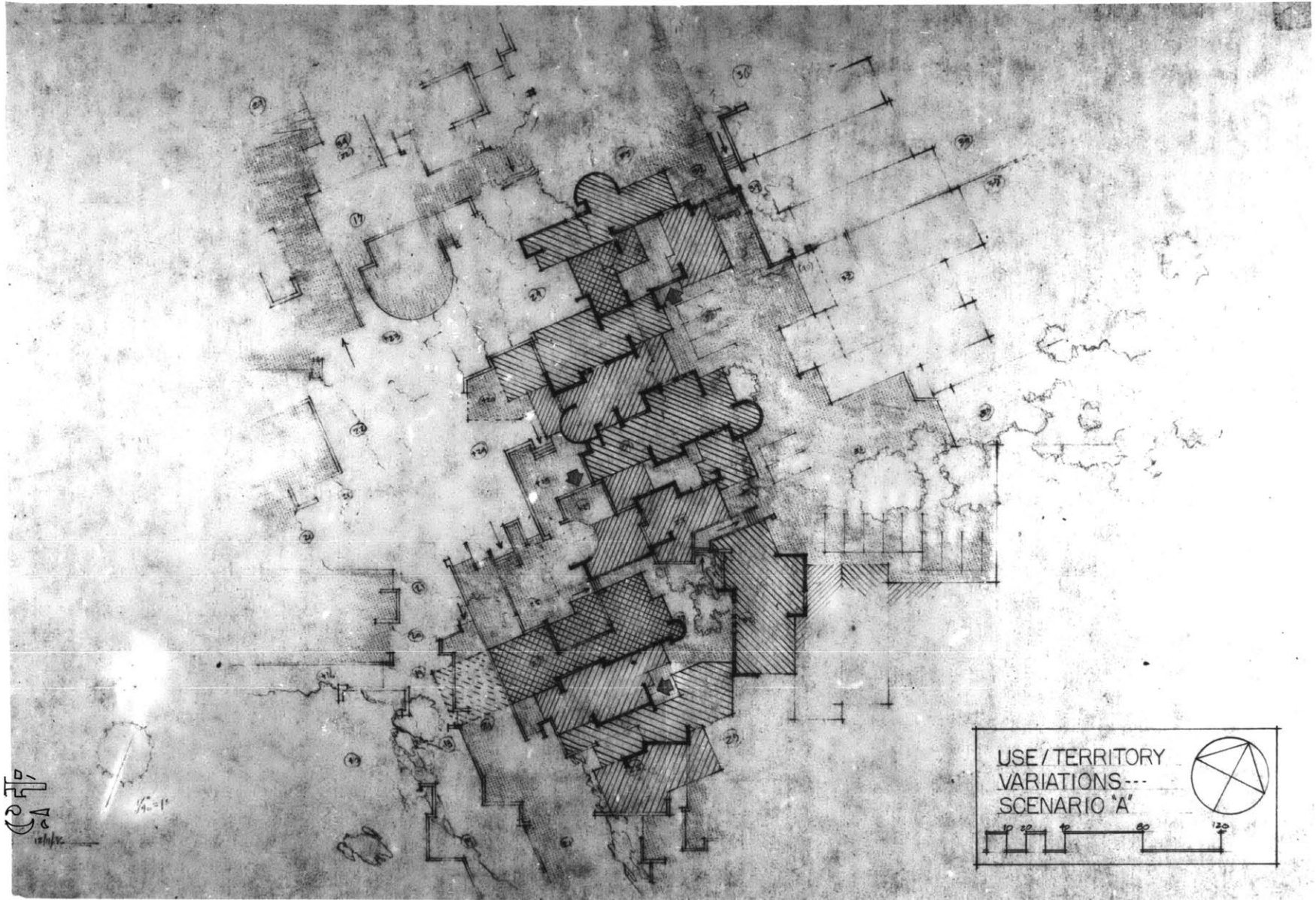
in from the beginning.



RFJ

12/1/72

1/4" = 1'





५) २७







627

12/1/78

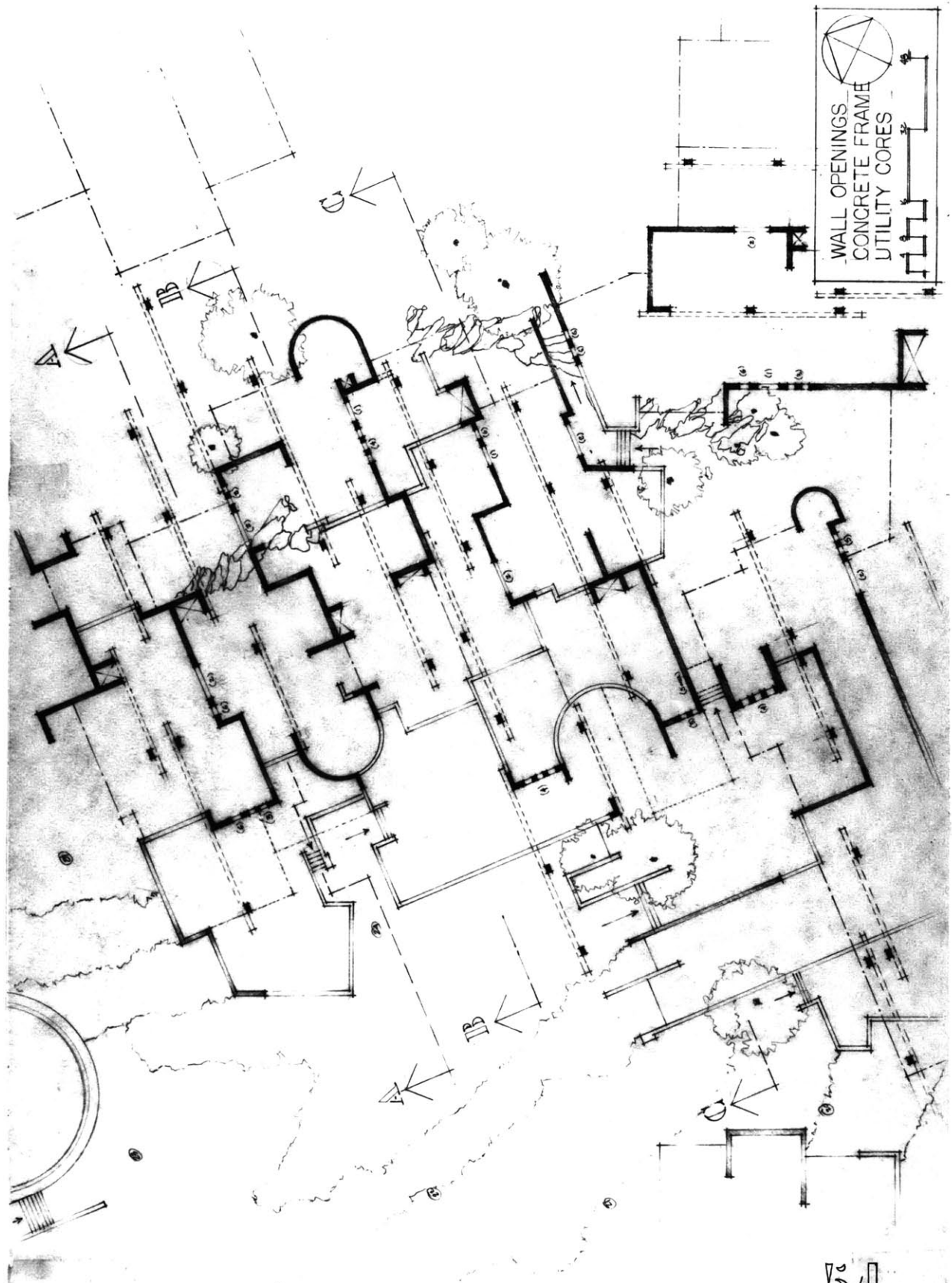


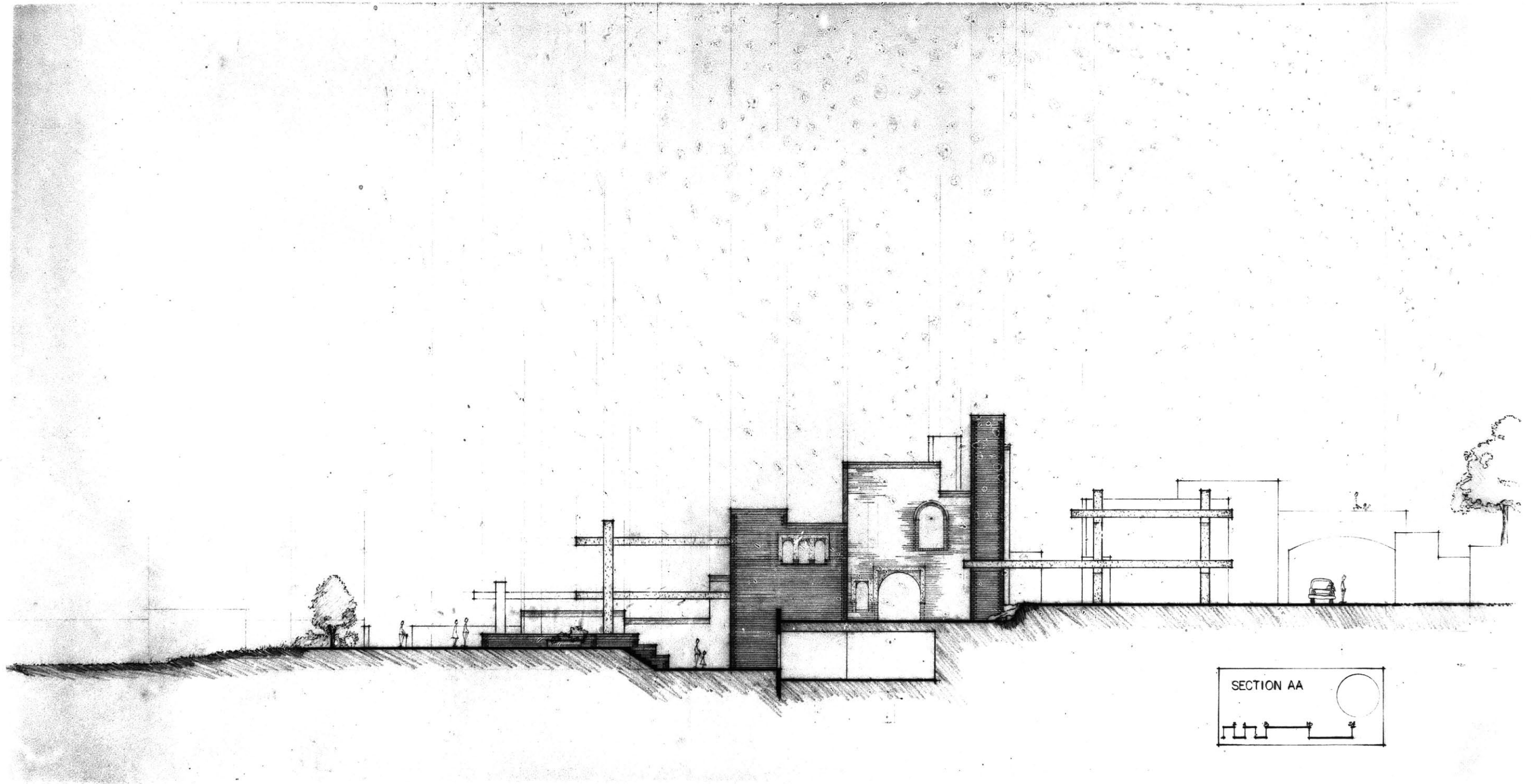
USE / TERRITORY
VARIATIONS ---
SCENARIO "C"

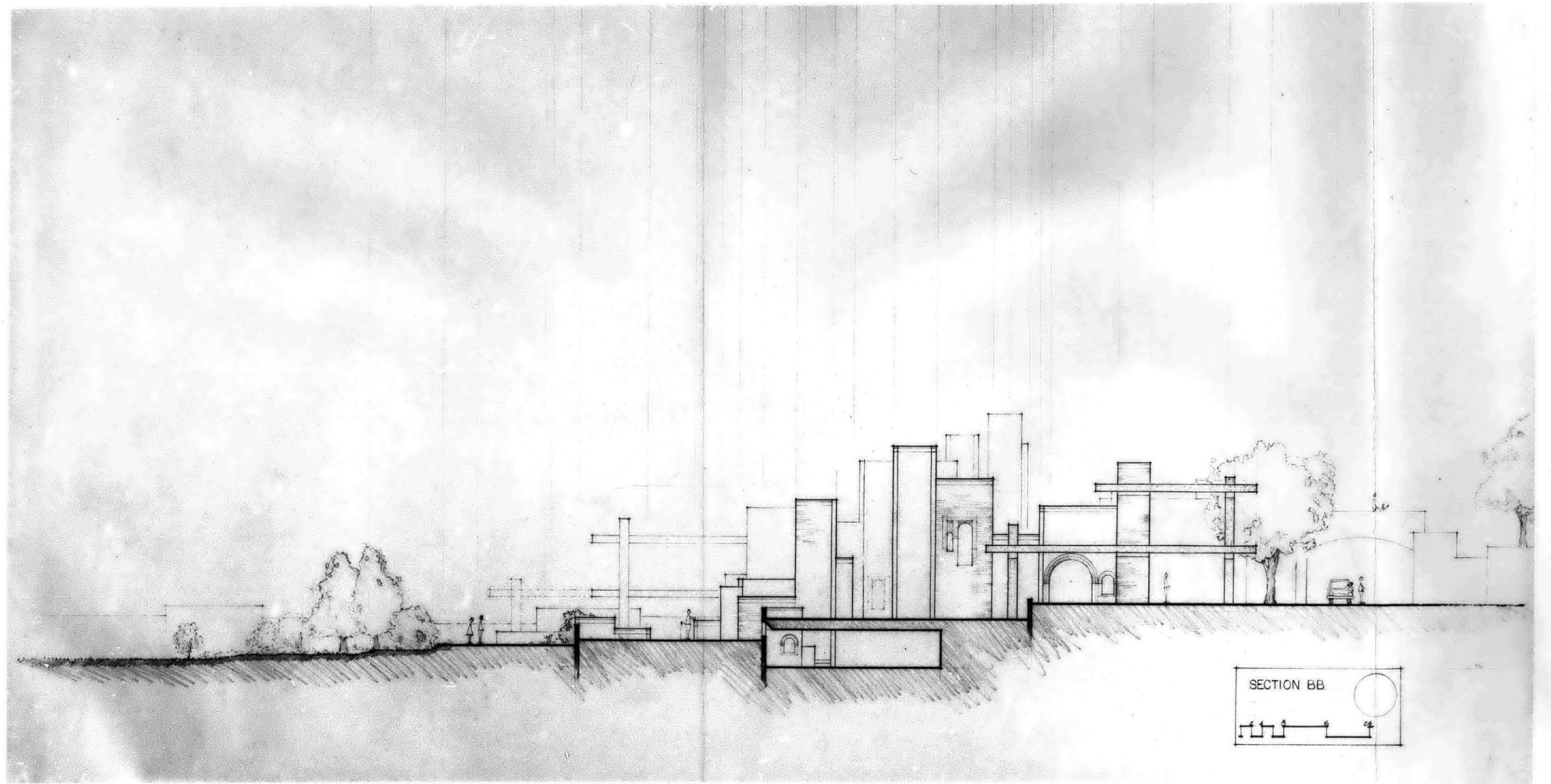
STRUCTURAL FRAMEWORK

As noted before, some actual structural framework is included in the built context, to provide a loose, three-dimensional basis of support for later building. (see pp. 51-54) 10" x 16" precast reinforced concrete beams (spanning 20' in private zones and 24' in more public areas) run parallel to the general bearing wall direction, supported on haunched precast columns. These provide a loose support locus for 4"x 14" wood beams, on about 12' centers spanning up to 16', which generally span between them and the walls. These beams are supported on haunches or ledges in the walls, and as a norm come off the wall in sympathy with its local direction. Generally, 2"x 8" joists will then be sufficient to span the approximately 12' between wood beams. A vocabulary of props and hangers is used (at all sizes of structure) to eliminate the need for joists or beams to rest directly on their supports, thus allowing them some freedom of location in section. The wood framing members will generally be added by individual builders themselves, but the concrete beams and wood beam support ledges are part of the original built context.

Double 4" x 14" beams, spaced about 2 feet apart, provide lateral chases connecting with the potential utility cores or stacks. The channel-shaped wall sections provided for these cores are intended to be large enough to allow for some other use as well, if desired.

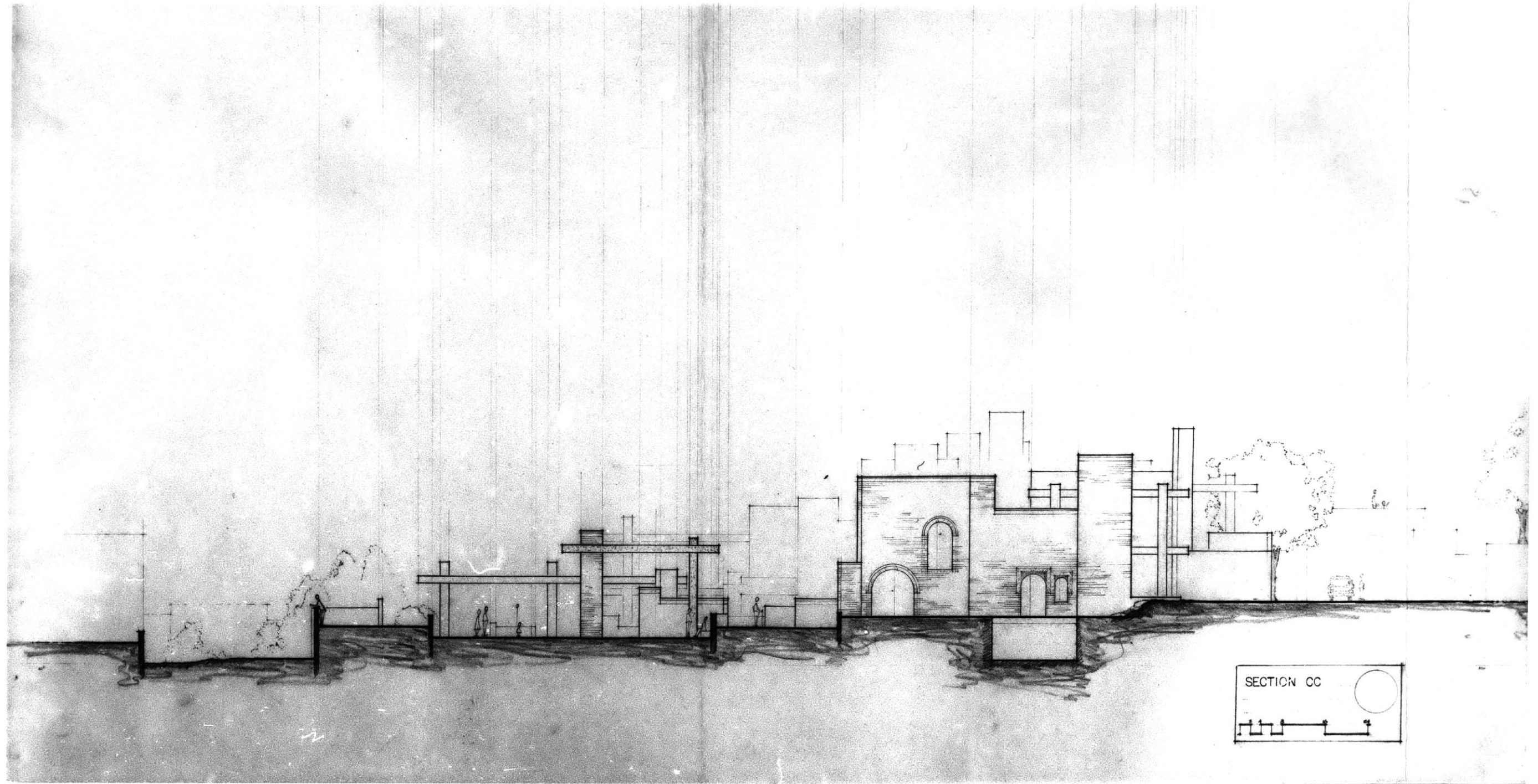




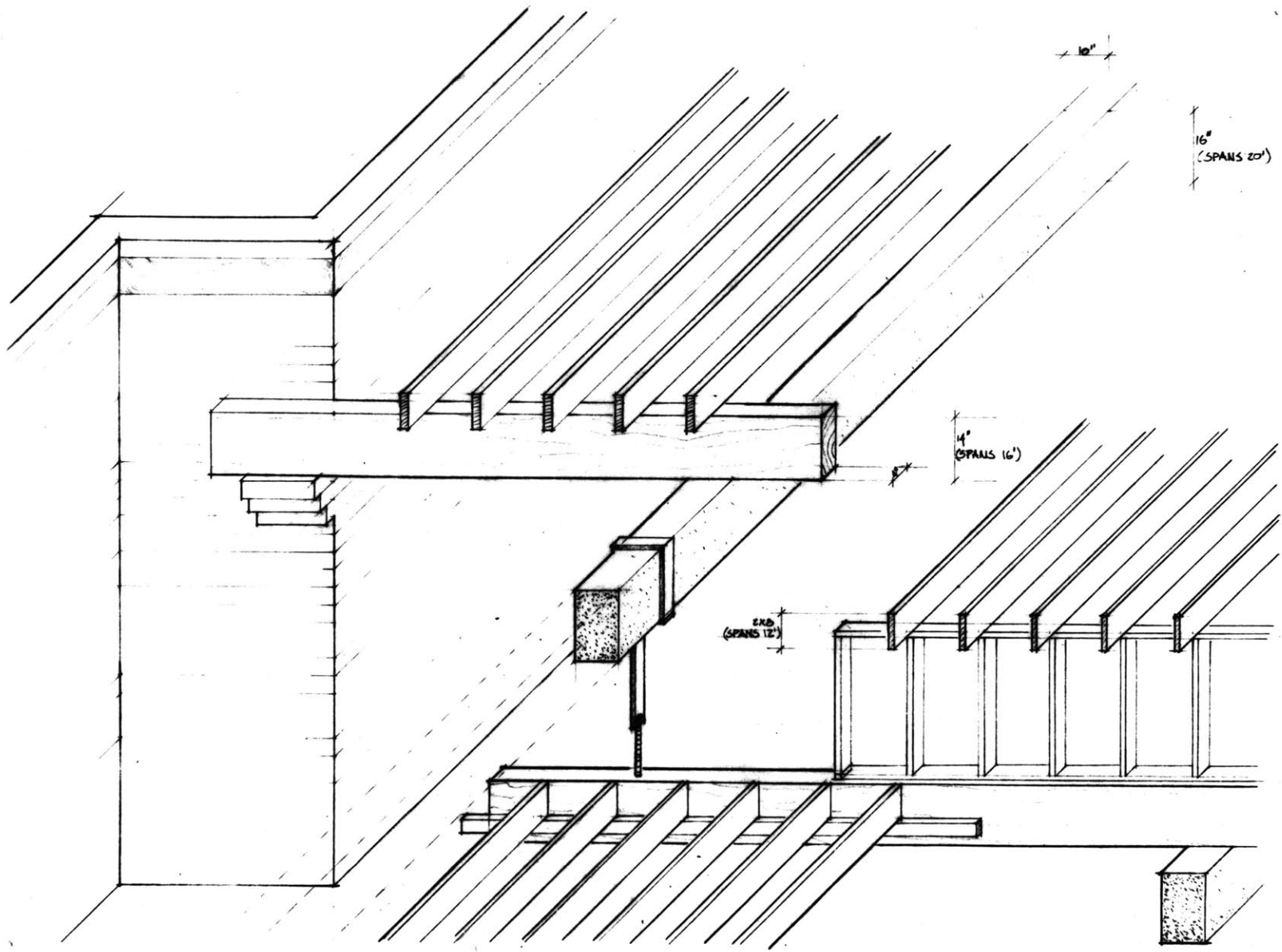


SECTION BB

157
ed

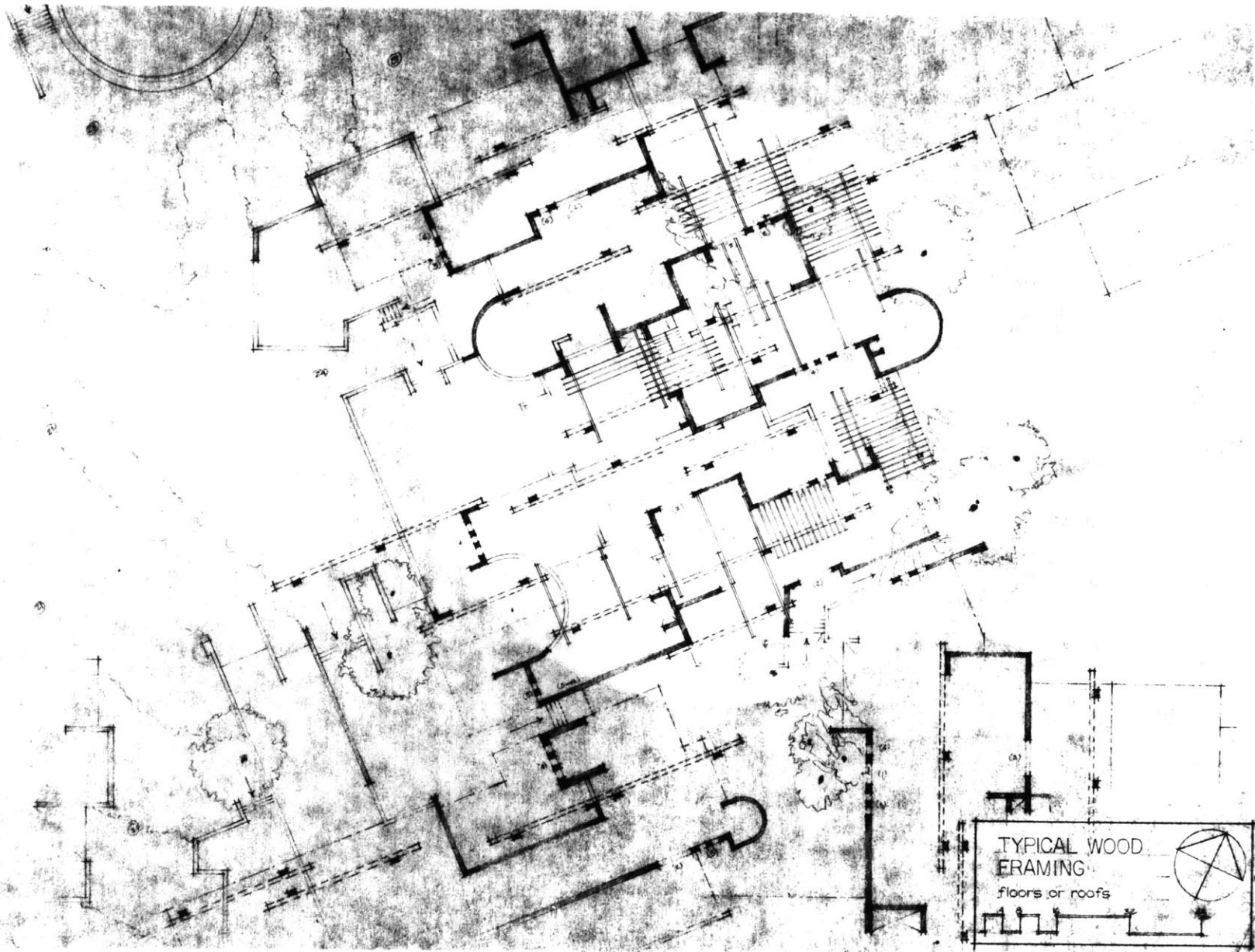


V₂ V₂
2222



22

2562



TYPICAL WOOD FRAMING
floors or roofs

UNIT ORGANIZATIONS

Unit organizations would in practice come from individual builders and their design consultants, in most cases not from the same designer as the original context. So, in experimenting with the specific use of this built context, several other students were asked to "respond" to this context by working out sketches of "units" or "houses". Although only one other designer's work is included here (see pp. 62), a thorough exploration and reworking of the parts and context would profit from the varied reactions of a whole group of designers with different skills and approaches.

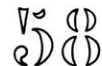
General organizational references are shown on pp. .

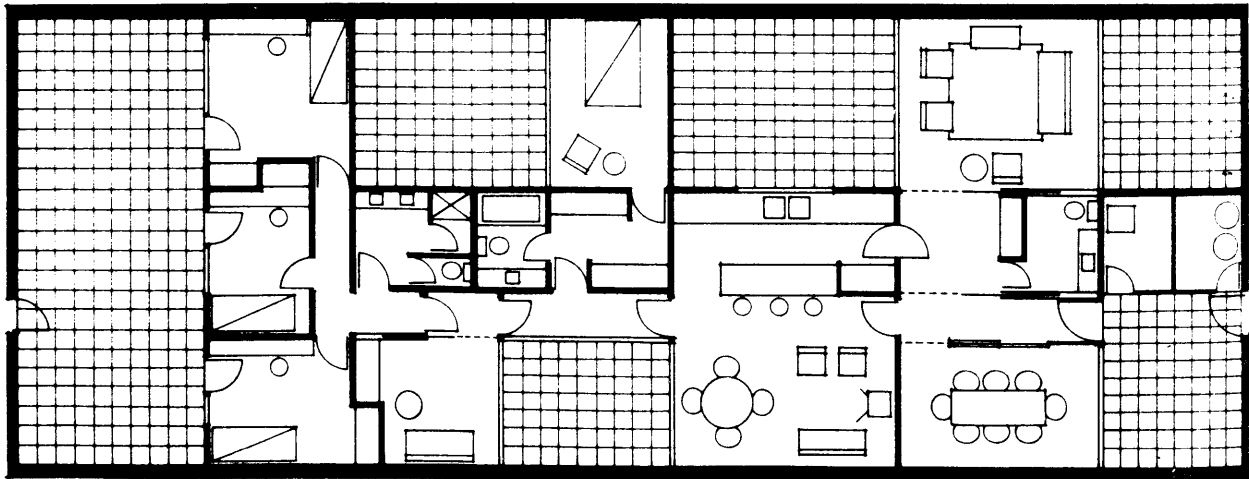
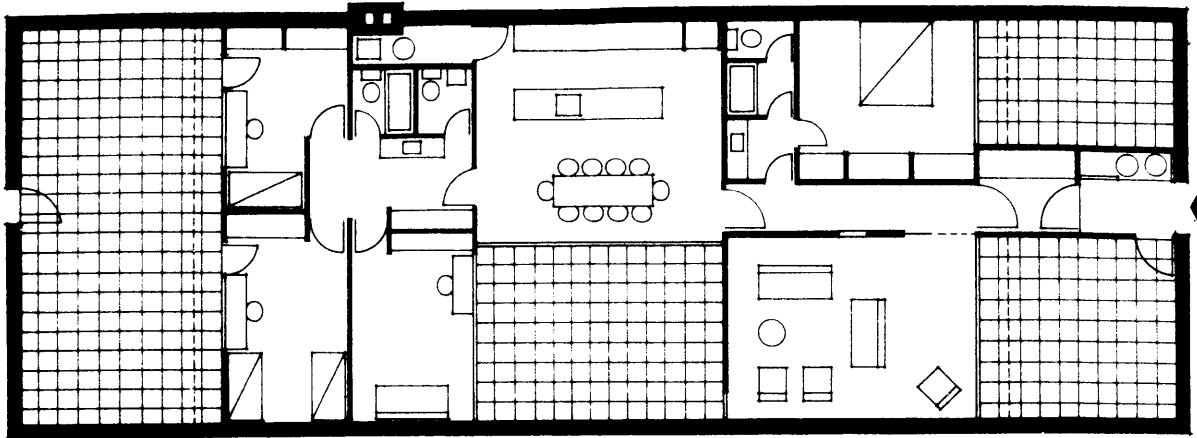


the reign of Sigismund Augustus; and again in the last quarter of the same century. The third wave of influence lasted for several decades of the seventeenth century. Architects from Tuscany, the Veneto and Lombardy came to Poland, among them Bartolomeo Berecci, Gianmaria Padovano, Giambattista Quadrio and Santi Gucci. A number of sculptors accompanied them. The taste for art moreover spread well beyond the circle of their immediate patrons. The desire developed, in particular, for larger and more elegant houses.

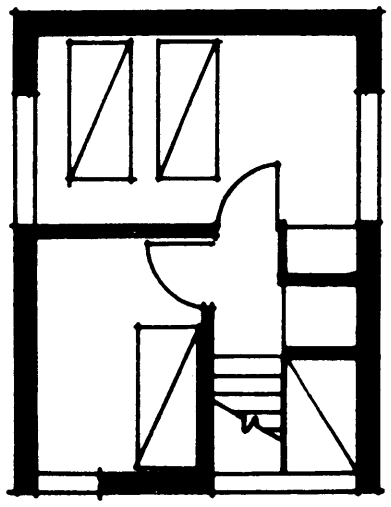
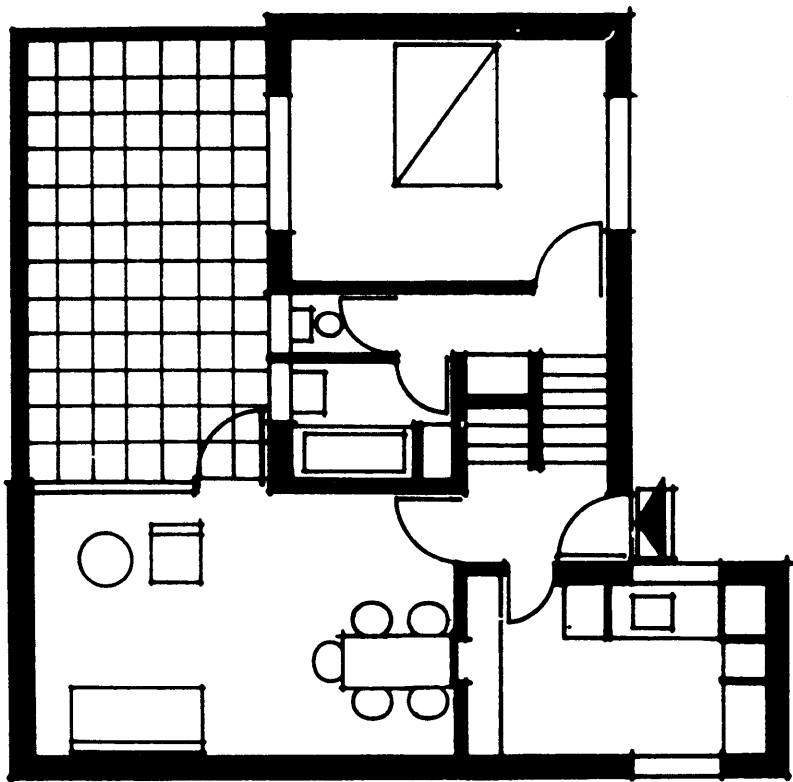
In central and southern Poland, the typical middle class house underwent certain changes. The ground floor room – used as a shop or workshop – was extended and the shop became a unit in itself. The number of residential rooms was increased so

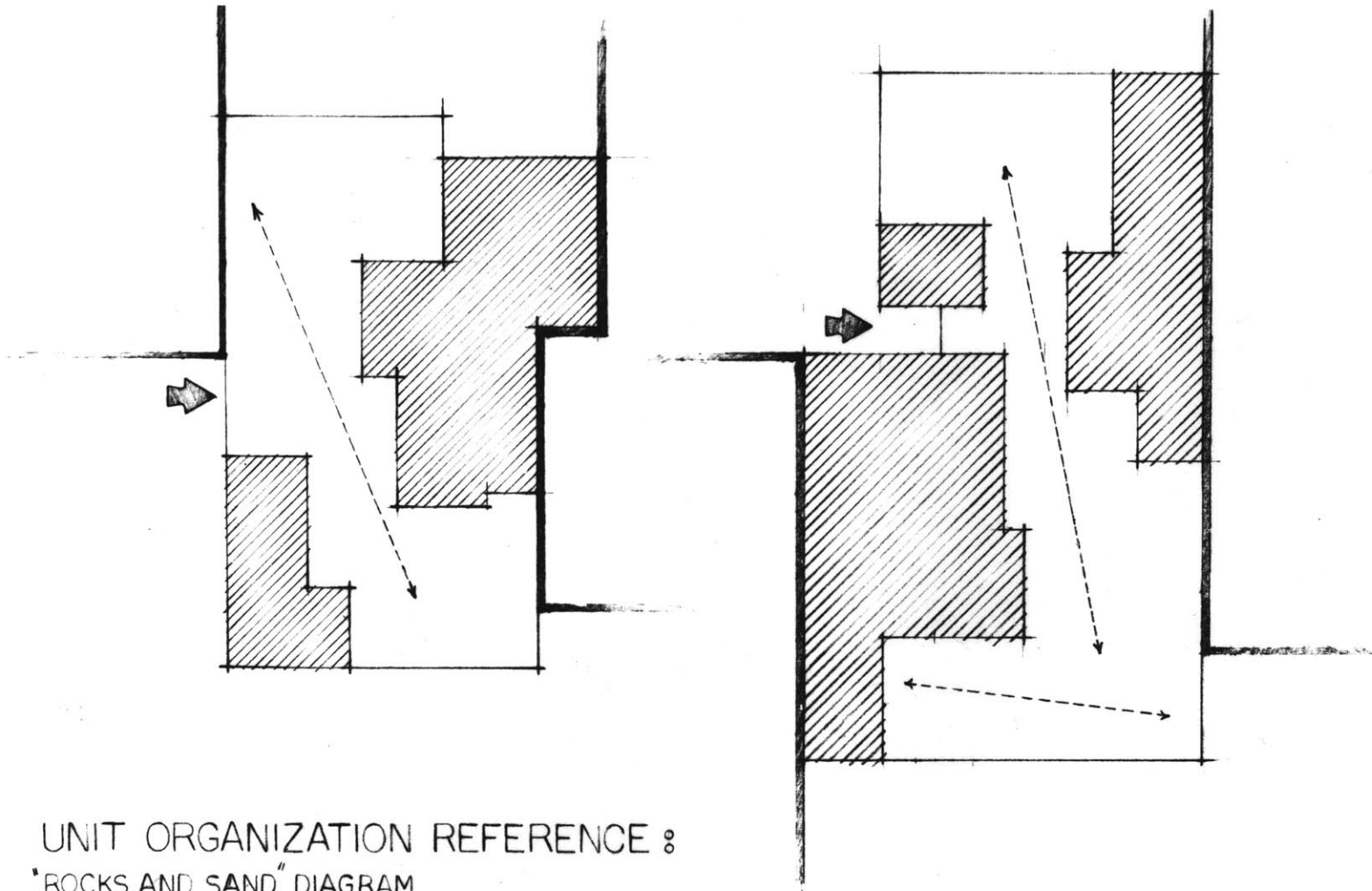
Main façades (below) and plans (above) of fifteenth and sixteenth century houses in Warsaw (from Staro miasto Warszawie, Warsaw, 1956). These buildings were built, in the fifteenth century, after a plan common in the Hanseatic cities in which considerations of space meant that the façade was comparatively narrow. (The early walls are shown on the plan in black). In the first half of the seventeenth century, most of these houses were enlarged; they were increased in depth to three rooms with the staircases set in the centre of each dwelling. The large reception rooms at ground level were divided to make shops and workshops. The façades were designed in the mannerist-baroque style fashionable during this period. Skylights were added to some of the houses in the seventeenth and eighteenth centuries.





VSD
eDeD





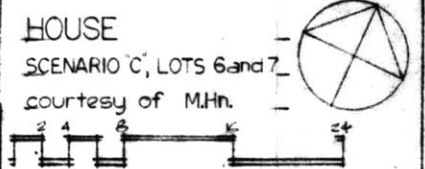
UNIT ORGANIZATION REFERENCE :
 "ROCKS AND SAND" DIAGRAM

1.9

- CLOSED, PRIVATE DEFINITIONS CLUSTER CENTRALLY
- PUBLIC ZONE MAINTAINS CONTINUITY AT LARGER DIMENSIONS
- AT LEAST 2 "PLACES" IN THE PUBLIC ZONE
- SAVE EXPOSURE AT ENDS FOR USE, ENTER AS CENTRALLY AS POSSIBLE.



HOUSE
SCENARIO C, LOTS 6 and 7
courtesy of M.Hn.



The caption block contains a north arrow pointing towards the top right of the page. Below the text is a scale bar with markings at 0, 2, 4, and 8 units. To the right of the scale bar is a small circular logo containing a stylized figure.



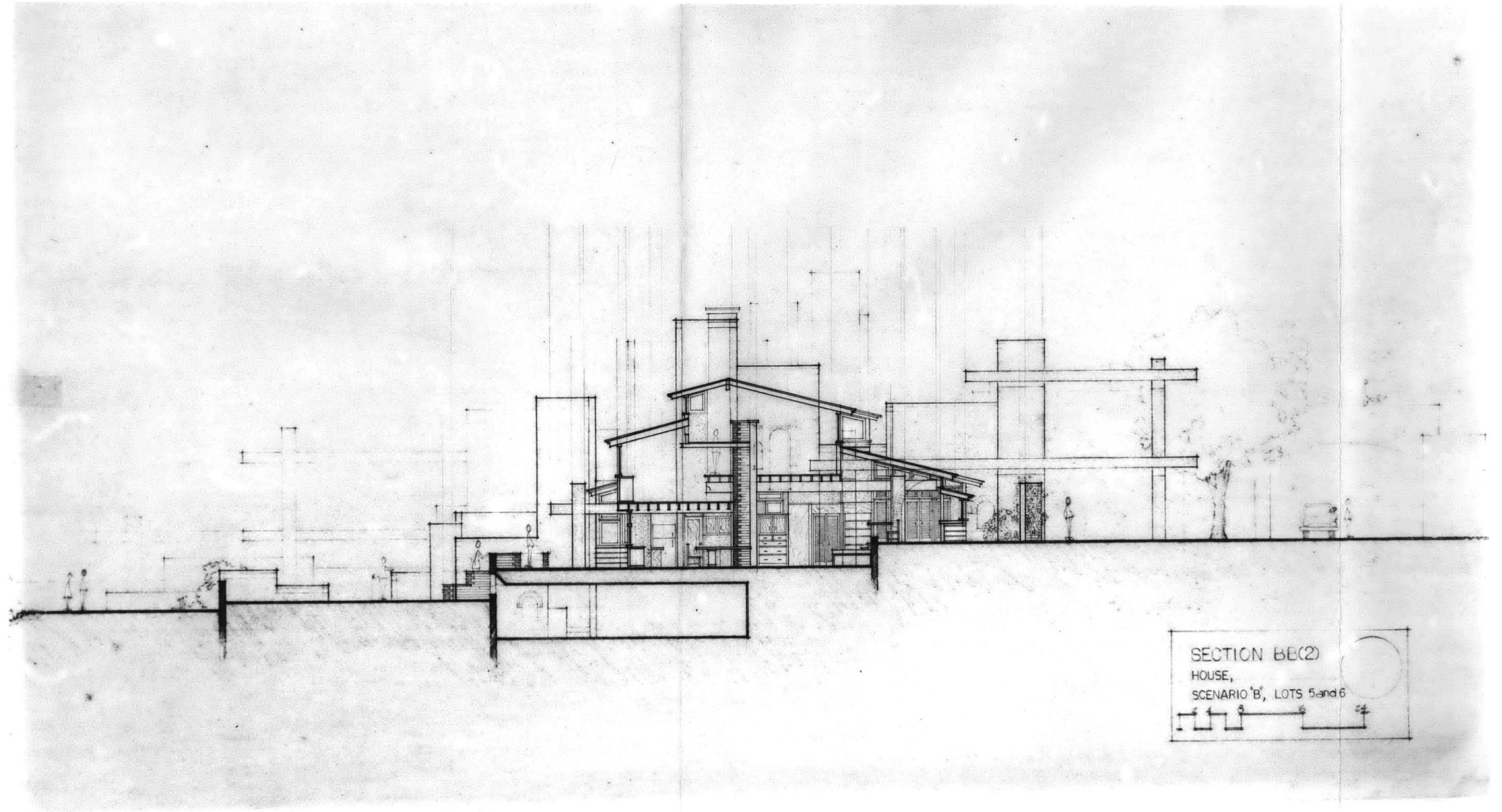
B₂

B₂

HOUSE
SCENARIO 'B', LOTS 5 and 6

0 1 2 3 4 5 6 7 8 9 10

(B7
Ded)

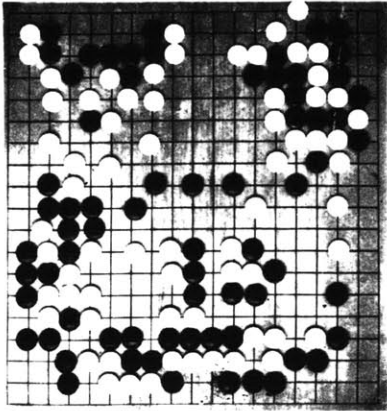


CONCLUSION

This work is seen as a first pass at what should be a cycled or repeated design process, involving many people. Various responses (house designs) to the parts and context should be tried, worked out in enough structural detail to really understand how well the whole notion works. Based on these responses, new ideas and design guidelines should lead to another pass at parts and built context. This models and "compresses" on the drawing board processes which historically would have taken place in built physical form over long time periods. The ultimate objective is to find a viable modern equivalent for those eminently successful historical processes.

APPENDIX A

Partial decisions: the fuseki design method



116. Black and white marker stones on a go board.

4. Fuseki, the Trump Element

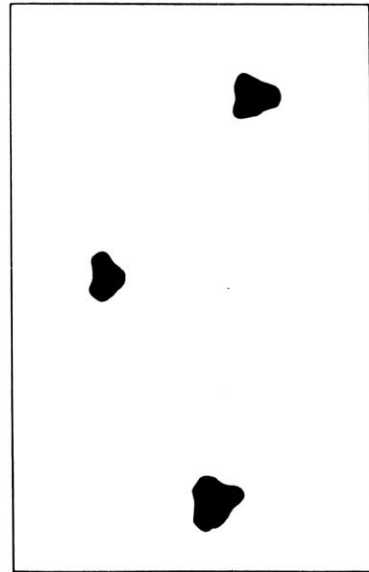
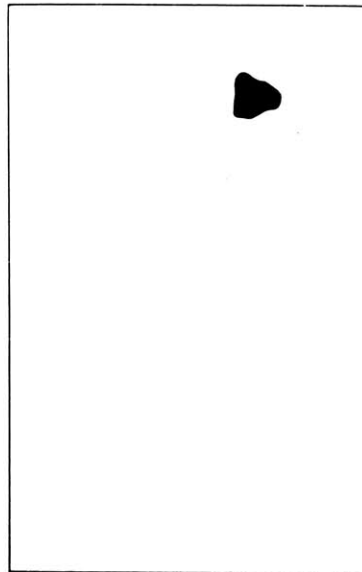
The game of *go*, a particularly Japanese amusement, has particularly simple rules. Two players using small round black and white flat stones and a wooden board divided into a grid place one stone after another in turn on the board till one player has succeeded in surrounding with his stones more space than his opponent. This is the only basic rule; the one who encloses more space wins. Since a slight mistake in the placement or timing of a single stone greatly influences the later stages of the game, it is imperative to be able to quickly foresee the moves your opponent will make. You must make your own moves conform to what you imagine he will do and work out an over-all system on that basis. This demands the ability to take into consideration many possibilities.

Retracting or moving a stone that has been set is forbidden. When you see that one of your moves is to your own disadvantage, you must simply go on to work out the best possible plan using that ill-placed stone. *Fuseki* is what we call placing your stones with a plan in mind. In other words, it is starting out on the basis of what you imagine future conditions will be, though your real knowledge of that situation may be vague.

In gardening techniques, the *yakumono*, or things with a purpose, are the elements that, like the *fuseki* in the game, are the focal points for action based on an idea of what the future situation will be. Whether these things are trees (*yakumoku*), stones

Setting stepping stones.

- 117. Placing the first stone.
- 118. Determine your aim in general, then place the second and third stones.
- 119. Fill in between the first two stones.
- 120. Fill in between the other two.
- 121. When all the stones are in place, it makes no difference which ones were the trump stones.



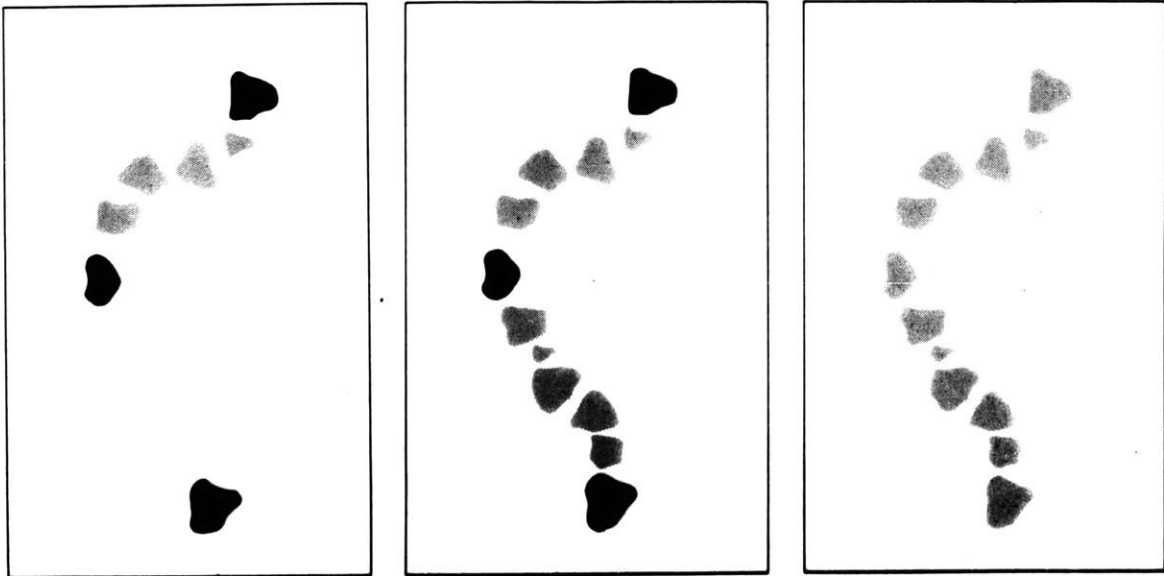
(*yakuseki*), or branches (*yakueda*), their purpose sets them apart from ordinary trees, stones, and branches. Unlike the *go* stones that are always the same size and always either black or white, the *yakumono* have no permanently fixed forms. On the contrary, their significance lies both in their placement and in the process of their changing. Consequently, in many instances, from the finished form of the garden we cannot tell what were the significant early formal elements. This is not an aesthetic of the finished form but a design technique that concentrates on the process of giving birth to the finished forms.

Once again, Teiji Itō has given us a good translation of the concept of *fuseki*. Since the stones called *yakuseki* are the key-points of the garden design, he first thought he would call them "keystones," but the particular meaning of this word in English convinced him it was inappropriate. He then thought of trumps in a card game. Trumps, though like all the other cards in the deck, are set apart by their function as something special. Although a formative stone or tree in a garden design is essentially like all other stones or trees, its function, arbitrarily imposed as with trumps, makes it something special. With this in mind, Itō decided to term such stones trump stones, and I suppose the way we treat these stones could be called the trump process.

5. Beauty and Function of the Trump Stone

What is the need of trump stones?

Once again we can turn to Itō for an explanation. Factory-produced tiles, all the same shape, look the same in a floor wherever you start laying them. Not so with garden stepping



stones, which must be both beautifully set and easy to walk on. In beauty of setting, the way the stones are joined is the question. In walking convenience, the number of stones, which governs the width of the stride one must take, is the main point. The trump stone is the element that makes it possible to satisfy both these requirements.

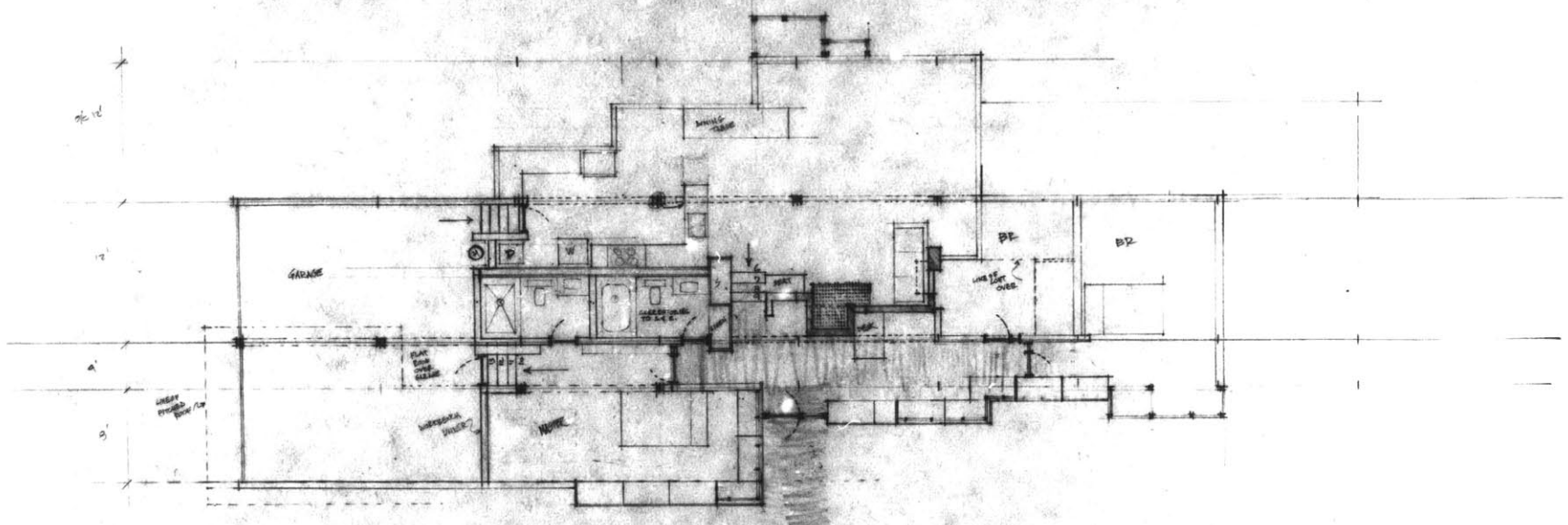
For instance, if we set out simply laying one stone after another from one point to another, we will use all the good stones first and run out of suitable ones at the end. If we can buy only the best stones for the whole series, well and good, but that runs into money. For this reason Japanese garden designers and gardeners do not at first set out a definite course for their stepping stones. Before they set a single stone, they establish keypoints, where they set their trump stones. The first may be at the beginning of the path of stones, say in front of the entrance to the garden. The next might be at a spot where the path splits in two directions, and the third at some rising from which the view of the garden is good or at the edge of a pond. These are the hints for the whole course. The gardener sets these trumps first and then uses ordinary stones to fill in the spaces among them. The system prevents any serious loss of harmony. It is impossible with this method to plot out the entire course of all the stepping stones from the beginning. Since the Japanese gardener, or architect, does not begin with a blueprint plan of the entire garden, though he has an image of the completed product, he could not put it down on paper. In other words, the process he will use is set, but no definite plans have been formulated.



APPENDIX B

The Parts and Context approach should be helpful in a single-family detached dwelling as well. In the two examples sketched here, the "context" included principally a very simple structural framework, adjusted for the local conditions, of wood posts and 4 X 14 beams. Variations from this frame are built with Parts or with small sections of bearing wall. As a general rule, extensions within 4' of the frame are made with Parts or by cantilevering. Extensions in the 8' range are supported by bearing walls. In the 12' range, a new bay of large framework is added. In some cases, bearing walls replace the beams where closure is desired on beam lines. As before, Parts are used to build key decisions and definitions, after which a "slack" building method like standard stud wall completes the closure.

3/5 scale
~1500
x60% = ~900 in high base ≈ 4 days (low)
detailed + 2 days (prep) = 8

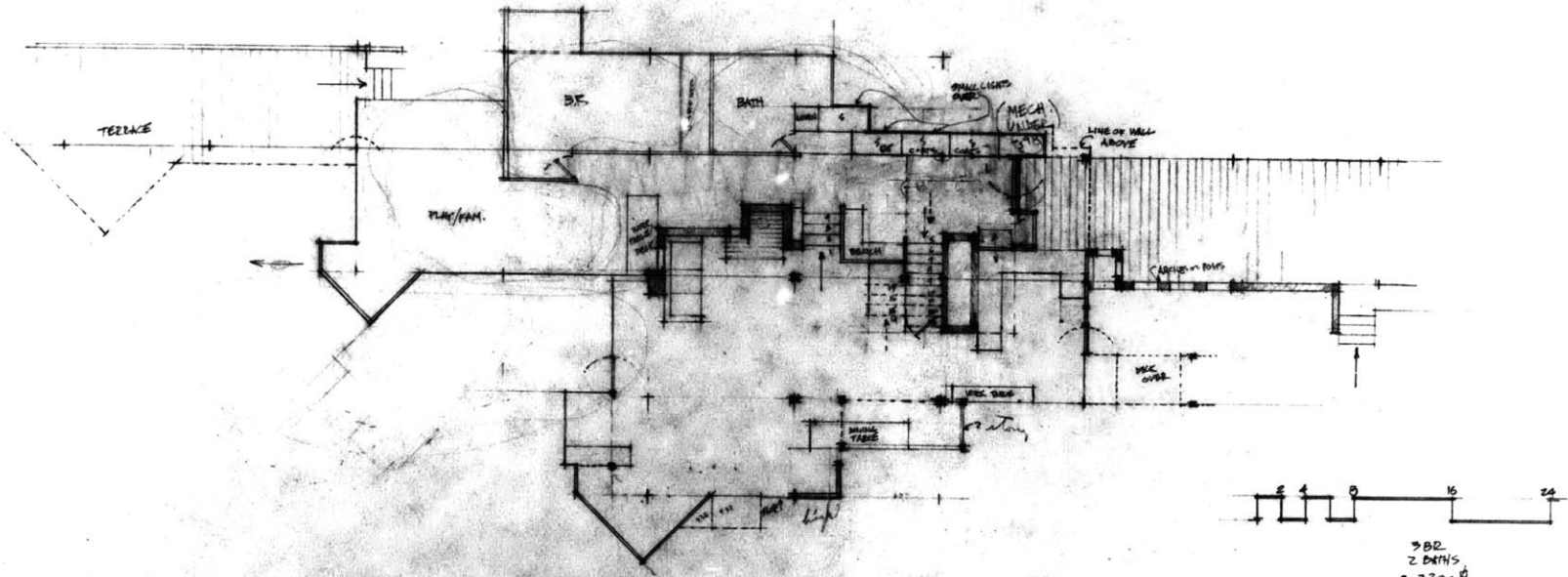


12'
12'
4'
3'



17

1/4/76



FD

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	1	2	3	4	5	6	7	8	9	TOTAL
REALISTS	2	0	1	4	2	1	0	6	2	0
IDEALISTS	0	0	0	0	0	0	0	0	0	1

D. FRADON

• •

7
12