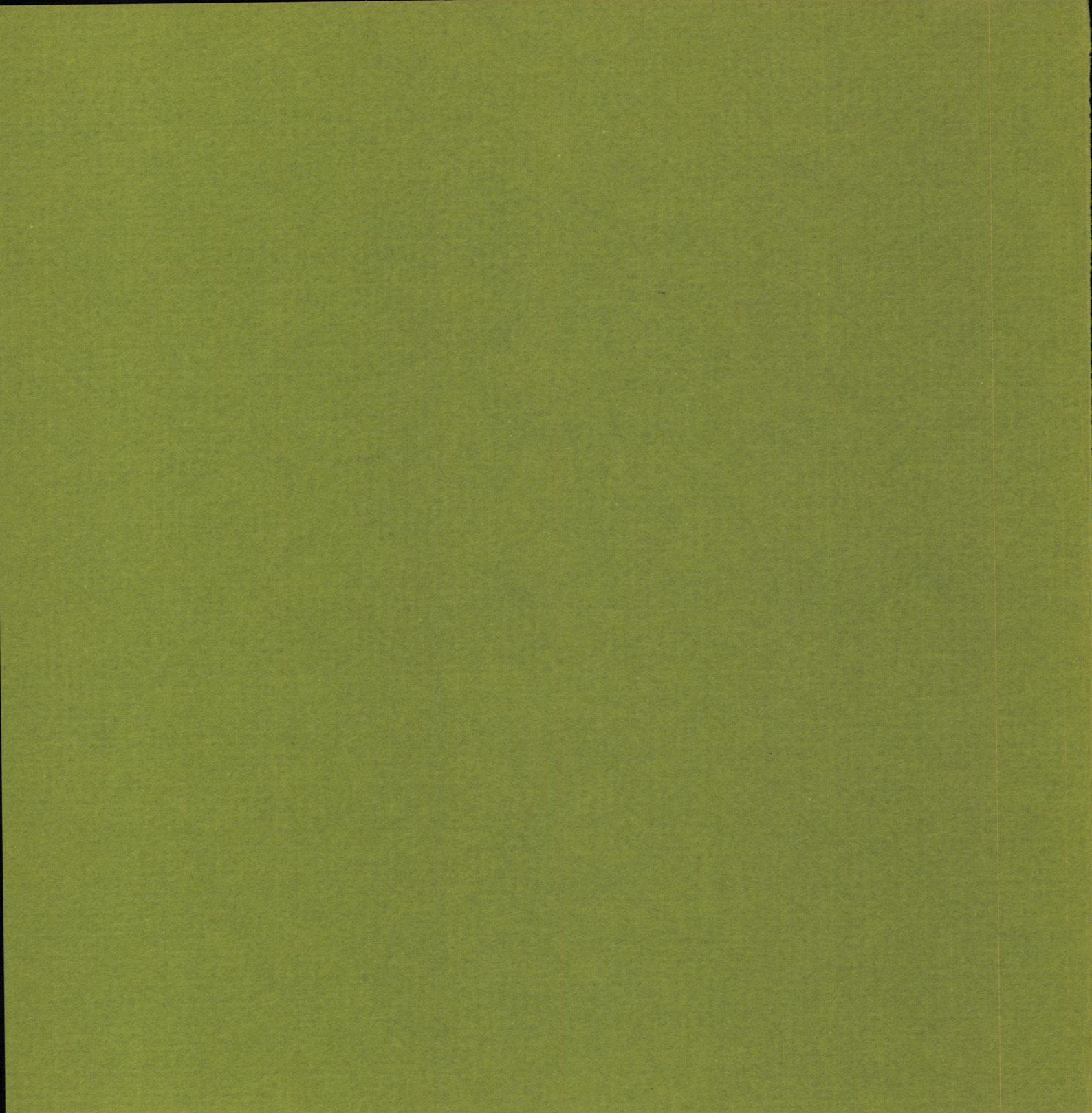


THE STUDENT PUBLICATIONS OF THE SCHOOL OF DESIGN

NORTH CAROLINA STATE OF THE UNIVERSITY OF NORTH CAROLINA
AT RALEIGH VOLUME 12 NUMBER 2



VOLUME 12

NUMBER 2

- ☐ **LANGUAGE AND THE DESIGNER**
- ☐ **FOUR CLASSIC PRE-COLUMBIAN CITIES — SITE RELATIONSHIPS**
- ☐ **MIDWAY PLANTATION — MEASURED DRAWINGS**

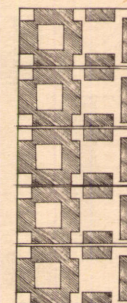
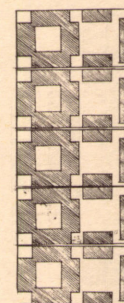
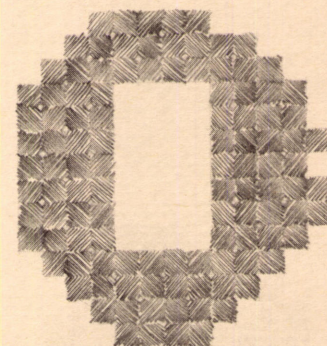
While preparing the article on Pre-Columbian Mexican cities for publication we were impressed by the notion that somehow the design of cities and their various parts was the result of the working of forces beyond the control of architects—society, Madison Ave. oriented types, insensitive speculators, etc. This is a prevalent notion among architecture students and, by inference from their work, architects. The architect whose heart is pure is beset by evils on every side. His works are like petunias in an onion patch. He is forced to build in cities that are unfriendly to his efforts. He can make a fortune if he is clever by exploiting current conditions which favor throw-away buildings; or he can retreat to the suburbs of the rich and produce jewelry. Most architects plod along as best they can with, we suppose, at least a vague feeling that all is not right. It is the nature of students, having little else to do, to worry about these problems and to formulate solutions. Being confronted daily with the current pre-occupation with pedestrianism and Italian hill towns and the actual conditions in Raleigh, we yearn for towns designed as units with friendly scale and inspiring site-mass-space relationships.

With this in mind we decided to compare Los Angeles—feeling that it was the most natural expression of the 20th century American city—with two cities more to our liking, to discover wherein our culture had gone astray. These two cities are Peking (Ming—Ching Dynasty) and London in the seventeenth century.

Peking

In China the form determinants in all building—houses, cities, etc., appeared early and evidently found social acceptance. Walled enclosures developed perhaps from defensive purposes in earliest

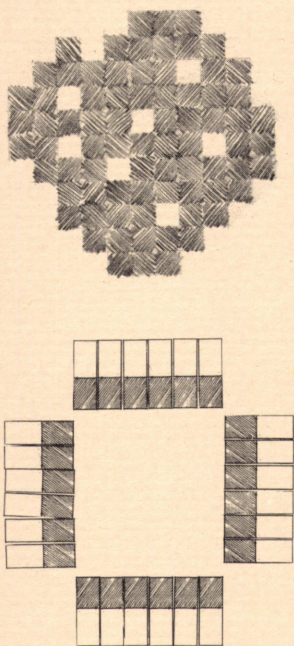
times. The quality most desired by a Chinese in a house might be its seclusion. He has historically demanded and gotten a clear cut separation of public and private life—with his or his family's controlling the private life and of course, society's controlling the public life. (To this day walls form the best insurance of privacy unless you own an estate.) Peking was laid out in fair sized plots as are American towns, thereby leaving space for gardens and courts after the functions of the house proper had been satisfied. The longer the Chinese had them the more important the courts and gardens became and are as characteristic of Chinese building as anything else. All buildings faced South with major openings on this side. This convention was employed in earliest times simply because the south offered the pleasanter prospect. Later it became involved with religion—evil spirits were assumed to come from the north, therefore the north sides of buildings and towns were blank or had very few openings. Broad streets were laid out running south to north and east to west. The entrance to the house or town is affected at the south end. The service and reception rooms are at this side. To the rear are the more private areas. Bedrooms flank the east and west sides. Towns are laid out in similar fashion, with the public buildings occupying a position corresponding to the private sections of a house (the society was family oriented and the Emperor was considered the head of the "family"). Façades were plain except for the doorways which were richly decorated and painted. The Chinese subscribed to the notion that his house was of no concern to the passersby, hence the businesslike façades. But he did not want to appear inhospitable, therefore the rich doorways. The streets of Peking were not, one imagines, as dreary as might be supposed from the above description. Trees and rooftops were visible from the streets which were filled with people (most daily commerce was conducted door to door). Houses were of a common height (usually one story) and the materials were



uniform—brick and tile. The streets were held in common and a Chinese's thoughts on society forbade any personal display in public. Display was confined to buildings of social institutions. In Peking the Imperial City is higher than the surrounding city. Here again, however, the royal "household" presents a rather restrained view to the city—blank walls punctuated by highly articulated gateways. The reception rooms for foreign visitors are particularly ornate, impressive of China's power and wealth. The private apartments are not as overdrawn as one might expect. They are similar to the rooms in private houses serving like purposes.

London

In London in the middle of the seventeenth century there developed a type of civic design that has been characteristic of the best in London ever since. This was the residential square. A number of estates were held by noble families between London and Westminster. As the city spread west these estates were made into subdivisions composed of ranges of similar or identical houses built around a square. In some cases the square was used as a market place, as at Covent Garden, but usually the square contained a garden enclosed by a fence to which all residents of the square had access. There was a clear separation of public and private life but this did not extend into the square which was shared visually with all passersby. To the public these houses presented a common and anonymous face. Behind the façades the tenants were free to build whatever kind of house they desired, but these turned out to be very similar. The houses were about thirty feet wide and of several stories. In the basements were the service elements; the reception rooms, parlors and dining rooms were on the first floor; the remaining floors were given over to as many private sitting rooms and bedrooms as were required. This type of building was also popular in the United States until the twentieth century. Façades

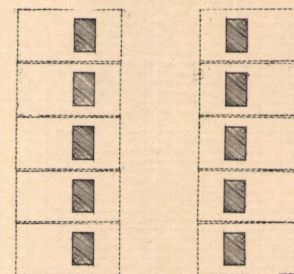
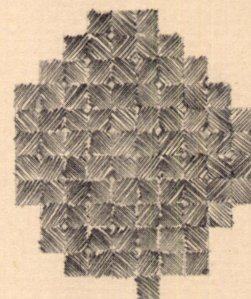


were on the whole rather plain with decorative emphasis on the doorways. Later the ranges were treated as one building.

These were private enterprise ventures, and their success depended on the taste of the clients and the ability of the architects. There was no direct social force as a determinant of form. The squares were not laid out in advance, but were built where it was convenient and profitable within the informal pattern of metropolitan London.

Los Angeles

Los Angeles has developed to its present state within the last one hundred years. In the last century there were numerous small towns in Los Angeles county. Growth was spurred by railroads and the boom of the 1880's. Lots were sold as fast as possible to the trainloads of people arriving daily. When the harbor was improved the city of Los Angeles annexed a twenty mile strip to take in the harbor. The city has grown in a like manner of annexing land with many towns retaining, if not their identity, at least the corporate structure. Los Angeles is a city of usually one story detached single family houses following the typical twentieth century zoning laws governing setbacks and side yard restrictions, which, so the myth goes, increases privacy at a rate directly proportional to the distance between houses. There are fairly rigid extra-legal controls on the architecture and site development (as the family that planted ivy instead of grass discovered). Separation of public and private life is a national ideal but it finds little expression in Los Angeles. A strip on either side of the street is semi-public, semi-private as are the side yards and to a lesser extent the back yards. The kitchen and other services and the garage and usually a bedroom are located at the front of the house. At the rear are two or more bedrooms and the living room. It is customary to have a "patio" as outdoor living space also at the rear. The rest of the property is given over to decorative planting.



More similarities in these three cities exist than was supposed. They are all low spreading cities with more or less standardized single family houses (one to four stories). The climate is not greatly dissimilar and outdoor living is practical in all cities. The notion that private and public life should remain separate is a great determinant of form in each case.

The culprit then is not "society" at all, but a mistaken conception of how its ideals are to be expressed. Simply, the proper restrictions have not been placed on buildings in this country. The architecture of Los Angeles does not express the ideals of the people because of a misunderstanding of how to achieve true privacy as well as the necessary counterbalance of a true public existence. The rate that cities grew greatly increased these misunderstandings and gave them the force of an apparent truth. Further, these fallacies became particularly apparent in low cost housing—the trailer trend becoming the final result of a fallacy pursued to the point where it finally expresses the antithesis of the stated ideal. It is possible and right to make laws that insure a certain uniformity and anonymity in all our buildings except perhaps those of social institutions (government, religion, schools, etc.) We cannot afford any longer to rely on the taste of owners and the ability of architects. Taste-ful clients are as rare as hen's teeth and architects (assuming all are equally competent) are involved in only a very small percentage of the work done.

The current zoning laws put forth in the best faith accomplish both too little and too much. They completely miss the point. Setbacks (of current magnitude), side yard restrictions, and the illegality of building enclosing walls at the property lines are extremely wasteful of space, and more important they restrict the pursuit of public and private life unnecessarily. (The current penchant for bringing the outside in and the inside out further complicates

the matter.) The suburbs have no public space except the roadways. People admittedly walk less now, but is this because they do not want to or because they cannot? There is also precious little private space in suburbs, either inside or out.

The only thing required to bring a civilized type of housing into existence is the judicious use of common sense, which may seem radical to proponents of current zoning ordinances. It seems reasonable that the way we build our houses is a major contributing factor to the sense of rootlessness that is becoming ever more prevalent. Decentralization and the automobile cannot take all the blame for this situation. Our houses offer no place to develop roots, no place for real privacy. We are forced to exist constantly in the uncivilized state of neither private nor public life. Our only recourse nowadays is the privacy of our automobiles and the publicity of drive-in establishments. If this is the ideal of our society we should support it with all our talents, but we humbly submit it is not.

William Brogden
Werner Hausler

LANGUAGE AND THE DESIGNER

*If there were no speech, neither right nor wrong would be known,
neither the pleasant nor the unpleasant. Speech makes us
understand all this. Meditate on speech.*

—from the Upanishads

This article was prepared by Louie Watkins during the Spring of 1963

What Is Language?

Language is a code-system of signs representing objects, events or ideas, and rules governing the use of these signs for the purpose of creating, analyzing and communicating concepts.

Language and Reality: The Individual

A newborn baby is completely ignorant of the world at large. He is adrift in a sea of perceptual stimuli, the source of which he has no way of knowing; for the moment, his universe is the gamut of his sensations. This universe is confused, being both isometric and particularized. One stimulus is more important than another only in terms of its intensity, and there can be little distinction between the various inputs. Without distinction there can be no structure, and without structure each recurring stimulus must be treated as a unique event. Only through development of his discriminatory powers does the infant organize elements into patterns, patterns into structure, and structure into a workable reality.

Of primary importance in this manufacturing of reality is the use of symbology. Thought, rather than dealing directly with the world, must set up a system of signs and learn to use these signs as representative of objects and events; this is the only way to achieve what Ernst Cassirer calls "theoretical mastery of being." Thus, whenever we think, we use symbology. To think of the *word*, "tree," means to conjure up the *symbol*, "tree." This symbol is not of course all the trees we have ever seen; instead it may be a universal tree synthesized from our experience, or it may be some particular tree which stands vivid in our recollection. In either case the resulting image is a useful symbol in that it serves to delimit reality by representing a category of events.

By means of such symbolic delineation we are able to detach ourselves from our concepts and reduce them to a reasonable scale. The

importance of this transformation is illustrated by the turning point in the education of Helen Keller:

As the cold water gushed forth, filling the mug, I spelled W-A-T-E-R in Helen's free hand. The word coming so close upon the sensation of cold water rushing over her hand seemed to startle her. She dropped the mug and stood as one transfixed. A new light came into her face. She spelled "water" several times. Then she dropped on the ground and asked for its name and pointed to the pump and the trellis, and suddenly turning round she asked for my name. I spelled "teacher."

With the dawn of the representative function of words a new reality occurs; objects that formally acted directly on the emotions recede to a point from which they can be observed and studied. Organization, understanding, a sense of totality and resulting intuitive insight follow the recognition of symbolic form.

Language and Reality: The Society

If communication is to occur within a society the signs and rules of a language must be agreed upon by the members of the society. This imposes a definite structure upon the language, which in turn manifests itself in everything the members of the society speak, write or think. The language becomes, according to Dorothy Lee, the main expression of "the structured world-view." By stipulating what we can talk about language determines what we can think about; there are roughly three thousand languages being spoken today, and every one of them is arbitrary and accidental—meaning that there must be roughly three thousand arbitrary and accidental modes of thinking about reality.

The Trobriand Islanders represent what might be called a "non-linear" culture; they do not conceptualize in terms of purposeful behavior and do not believe in what we optimistically call "progress." When a Trobriander describes an event, the listener has no way

of knowing whether it has already happened, is happening now or is about to happen at any moment—the Trobriand language has no tense structure. Trobriander legends and tales, their only literature, have no plot, no suspense and no climax. A Trobriand word is a self-contained concept; the word *taytu*, for example, refers to a yam of a certain degree of ripeness, roundness, color and so forth. If any of these characteristics change the yam is no longer a *taytu* but a *bwanawa* or a *yowana* or any one of several other words describing yams of various qualities and conditions. The Trobrianders' reluctance to think in terms of sequential events is understandable in view of the fact that they have no words equivalent to *for the purpose of*, *so as to*, *why* and *because*. Their languages does not have even a little connective like *and*.

The Wintu Indians, having inhabited the forests of North America since several thousand years before the arrival of the white man, possess a very naturalistic philosophy. Their basic tenant is that Ultimate Truth exists outside the realm of man's experience; he believes in it but does not know it and cannot change it. Reality for the Wintu is an unpartitioned mass which the observer attempts to delimit and rationalize, and life is nothing more than a temporary focusing of some small part of this mass. Their language, of course, is definitive of their world-view: the Wintu always express in their speech a cautious respect for the spatial-temporal vagaries of Nature. A future event is never predicted in terms of absolute occurrence but is *desired* or *willed* or *believed in*. The Wintu does not aggressively define objects but simply states his experience: *I call this bread* or *I feel or taste or see it to be bread*. Through a system of definitive suffixes, Wintu words can communicate the source of any statement—whether the information was felt or seen or heard or based on hearsay or imagined. Their participation in reality is interpolative, not creative. The equivalents of our words “make” or “manufacture”

are the less active *to transform* or *to work on*; there do not seem to be Wintu equivalents for the English words "art" and "design."

The following is a comparison of the verbal descriptions of the spectrum in three languages: Shona, a dialect of Rhodesia; Bassa, a dialect of Liberia and English

SHONA —	cipsuka	citema	cicena		cipsuka	
ENGLISH —	purple	blue	green	yellow	orange	red
BASSA —	hui			ziza		

The Science of Language

There are three areas of interest in any linguistic study: syntax, semantics and pragmatics.

Syntax is the study of the formal relationship between elements. (WORD-ORDER)

Semantics is the study of the relationship of symbols to the objects they designate. (WORD-MEANING)

Pragmatics is the study of the action, state and environment of the speaker. (WORD-USAGE)

The object of all these studies—the structural basis of language—can also be thought of as having three divisions: content, expression and vocabulary.

Content is what we want to say, the basic information to be communicated.

Expression is how we say it, the communicative process.

Vocabulary is the sum of the constituent elements of the expression.

Of the three, vocabulary is the most unstable component of language. Grammatical structures may influence the growth of

civilizations, but individual words come and go at a surprising rate. An average American learns about a thousand new words a year during his lifetime, and forgets old words at a lower but appreciable rate. Within a society words last longer, but even the most basic words are replaced at the rate of 20% per thousand years. This rapid turnover is useful in that it allows language to adapt to a changing society. Vocabulary affords flexibility, while expression supplies permanence and predictability.

Recent studies indicate that there may be a pattern in the constant change in vocabularies; theories of "selective variation" allow statisticians to make fairly confident guesses about the future of any language. By the year 2800, for example, it is predicted that all so-called "strong" English verb forms (sing, sang, sung) will be replaced by "weak" forms (sing, singed, singed).

Another theory notes that the four structural classes of language—*isolating*, *agglutinating*, *inflective* and *polysynthetic*—seem to be parts of a recurring cycle through which all societies eventually pass. Ancient civilizations like China may have completed the cycle and are now beginning again; this is extremely hypothetical however, since no one knows where the cycle begins and ends.

The four structural classes of language:

Isolating or Positional—meaning depends upon order of arrangement of simple words. (Chinese)

Agglutinating—meaning is built up by addition of syllables to word. (Turkish)

Inflective—meaning is modified by inflection of root word. (English)

Polysynthetic—unit of meaning is the sentence. (Eskimo)

Words consist of syllables, and syllables are composed of indivisible sounds called *phonemes*. Because they are the smallest differentiation between utterances in spoken language, phonemes are the basic

elements of the expressive system. The counterpart of the phoneme in written language is the *grapheme*, and the basic element of meaning—the “minimum content”—is the *morpheme*; the study of *phonology* deals with phonemes, and *grammar* deals with morphemes.

The development of the concept of phonemes and morphemes has led to scientific analysis of language as an information-communicating system. “Information theory” was originally conceived by telephone engineers for the purpose of designing circuitry; linguists have since adopted the method for their own purposes. The premise of the theory is that all communication can be reduced to *bits* (or *binits*, as the linguists call them), which are the most basic units of information. One binit is defined as the capacity of a code consisting of two alternative signals having an equal probability of occurrence; the capacity of any code, then, becomes the logarithm to the base two of the number of alternative signals:

$$\left. \begin{array}{l} \text{capacity in bits} \\ \text{of a code having} \\ \text{eight signals} \end{array} \right\} = \text{LOG}_2 8 = 3.0 \text{ bits}$$

In most languages, however, signals do not occur with the same probability. Some of the forty-six phonemes in English are used more often than others, and as a result the distribution of information is not equal. This is the principle of *redundancy* a measure of the inefficiency of communication within a language system:

$$I = \text{LOG}_2 1/p$$

The information content of a signal is equal to the logarithm to the base two of the reciprocal of the probability of that signal, meaning that the more frequently a signal is repeated the less new information it carries. Redundancy is the difference between the theoretical capacity of a code and the average amount of information actually conveyed.

English like all languages has a great deal of redundancy built into it. Part of this inefficiency is caused by human error, part is due to the limitations imposed by rules of grammar and part by the fact that the normal speaking voice occupies only a small portion of the audible range of sounds. It has been computed that the human voice is capable of sending—and the human ear receiving—at the rate of fifty thousand binitis per second. In actual practice English speech averages only fifty binitis per second giving our language a redundancy of 99.9% ! But this is not all bad ; we can talk in a noisy room, catching small parts of a conversation, yet have a good idea of what is being said. Redundancy gives us enough leeway in communication to insure understanding under all sorts of conditions, and often serves to expand the meaning of our statements.

Language In Transition

Remembering the interrelatedness of a society's culture and language we should expect great changes in language within the next few years. The first half of this century has been a period of unprecedented social and technological change, and nowhere has change been more dramatic than in the field of mass communications. Radio, television and the movies are pouring out information every day to hundreds of millions of people, many of whom are illiterate. Entire races, never exposed to the printed word, are moving directly from their oral traditions to modern ideas of national government, social reform and power politics. What the effect of such a bypassing of the literary stage will be no one can guess, but considering the speed at which things are developing we should have some answers very soon.

The trend in communication is toward *simultaneity*—everything happens at once. The movie screen bombards the audience with constantly changing sight and sound. The radio announcer's voice

rolls on and around, never pausing for reflection. The newspaper page is a patchwork quilt of a dozen stories, each vying for attention. Edmund Carpenter has called today's mass media "a cosmic *Finnegan's Wake*," and the metaphor is frighteningly appropriate. In step with the trend, electronic data processing machines are already conversing, after their fashion, at the speed of light; certainly mankind cannot be far behind.

The mass media are causing revolutions in more ways than one; today's most interesting social phenomenon is the rise in wealth and prestige of "creative people"—the ones Spectorisky named the *symbol-manipulators*. These are the actors, publishers, writers, composers, architects and designers who have mastered the rhetoric of the new forms of communication. Life Magazine recently noted that there are twenty-seven million people earning over \$10,000 annually in the United States; by 1965 they could number thirty-seven million. This is the largest and most rapidly expanding privileged class in history, composed largely of the leaders of the new cultural revolution. All this talent being expended on the communicative arts is certain to have tremendous impact on our way of life, and on the lives of people all over the world.

Language and the Designer

The designer deals with all the aspects of human behavior which we have discussed in connection with language: the individual's sense of reality, the operation of reality by the use of symbol and the development of the social identity. He is concerned with the achievement of structural unity through the manipulation of form and functions—a concept parallel to the cardinal purpose of language. He is one of the formulators of a society's world-view; thus we can see that the designer, to be successful, must be a very special and very skillful kind of linguist.

The design process already has a language of its own: the drawings diagrams and shapes and colors with which we are all familiar. Ideally these symbolic forms are so closely related to the logical demands of function that, within a particular solution, the two are integral and indistinguishable. Designers have always regarded technology as a source of functional solutions and inspiration for new and meaningful form with the result that their expressive system is constantly changing as science and society develop. The sciences of today are undergoing a period of rapid change, particularly in the nature of their mathematical language-systems. The laws of Euclid and Newton have been stood on end and a new universe, indeterminate, relativistic and simultaneous is being constructed. If he is to continue to make a unique contribution, to retain his role as an organizer and innovator, the designer must modify his traditional expressive forms and learn to operate within the new reality.

Other creative disciplines have profited from revision of their communicative methods. The ancient Greeks did not have an appropriate arithmetic language; they had no symbol for zero and used letters of the alphabet for numbers. The most brilliant minds of the age of Pericles puzzled over problems which today's fourth-graders can solve with ease. Because certain operations are impossible to grasp in terms of ordinary language, modern mathematics could not exist without ideographic symbology. Physics since the time of Leibnitz has made increasing use of special ideograms, and the Boole-Schröder algebra of symbolic logic has revolutionized philosophical thought.

What will the designer's new language be like? Such a question is difficult to answer directly, but there are some trends that can be noted. The new forms will be more mathematical and analytical than existing expressive systems. They will afford precise control of many design factors which are now handled intuitively and

perhaps even predict solutions for problems not yet stated. The value of such a system is stated in Charles Eames' letter to the editor of *Architectural Review*:*

If, however, a tool should be developed which could make possible the inclusion of more factors—and make calculable the possible results of relationships between the combinations of factors—then it would become the responsibility of the architect and planner to use such a tool. The talent for associations would be far from neglected—it would be put to a much keener use. The level of creativity would be immediately raised and so would the responsibility.

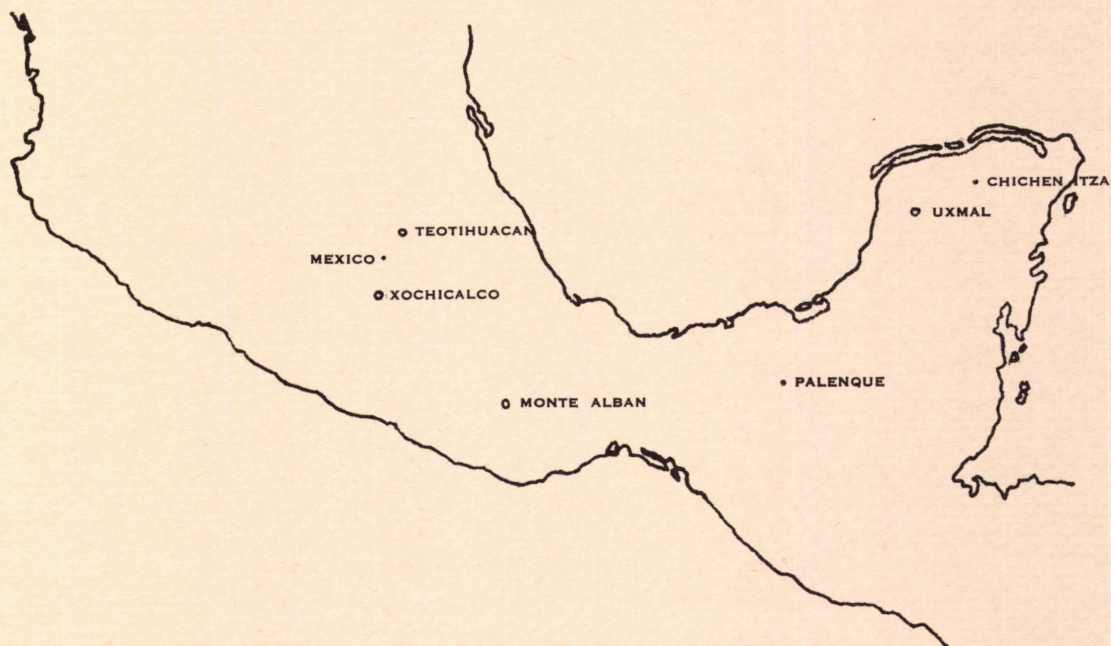
The tool Mr. Eames has in mind is modeled on Von Neuman and Morganstern's "theory of games," a mathematical analysis of decision-making under competitive conditions. The development of strategies using this theory resembles in many ways the designer's problem-solving process; certain other mathematical models may also apply, such as statistical analysis, information theory and Rudolf Carnap's "illogical calculus." Whatever the approach, the object should be the same: to free the designer from the weight of every decision that can be rigorously determined, aiding him in that intuitive leap crucial to the creative process.

* This letter was previously published in the 1956 *Student Publication of the School of Design*.

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SITE RELATIONSHIPS OF FOUR CLASSIC PRE-COLUMBIAN
CITIES IN MEXICO



This article was prepared by Kenneth Haggard during the Summer of 1963. He visited Monte Alban in December 1960 and in Summer 1961, Xochicalco and Teotihuacan in Summer 1961 and Uxmal in Summer 1962.

The characteristics that most unite Pre-Columbian Mexican cities are the relations of mass to space to site. We consider here four classic Mexican complexes that exemplify these characteristics. Others may prove to be equally valid in the future, but the present state of excavation precludes proper analysis. The four sites are: Teotihuacan, 30 miles N. E. of Mexico City; Xochicalco, about 80 miles south of Mexico City; Monte Alban, in South Central Mexico near the present city of Oaxaca; and Uxmal, on the Yucatan Peninsula.

Although there is great uncertainty regarding dates, many scholars agree on 200 B. C. to 900 A. D. as the classic period. This period saw the rapid rise of several building cultures: The Teotihuacanos who built Teotihuacan and who seem to have been strongly connected with Xochicalco; the Zopatec who built Monte Alban and the Maya who built numerous centers in Guatemala, British Honduras, Chiapas and Yucatan, one of which is Uxmal. For some yet undiscovered reasons all of these cultures collapsed about 900 A.D. Monte Alban, Teotihuacan and the classic Mayan sites were abandoned simultaneously.

Following this classical period came the historical period which witnessed the rise of the Toltecs around the Central Plateau and the Mixtecs in the Valley of Oaxaca. Some of the Toltecs migrated to Yucatan to conquer the Maya and establish Chicken Itza. Somewhat later the Toltecs in the North were conquered by the Aztecs who established an empire as far south as the Valley of Oaxaca. The Toltecs seem to have taken Xochicalco and used it as a city of their own but Monte Alban and Teotihuacan remained abandoned and were nothing but ruins when the Aztecs arrived.

What makes interest in Pre-Columbian cities in Mexico current is an awareness of the failing of contemporary architecture to adequately satisfy the mass-space-site relation requirements. This is the strongest characteristic of the Pre-Columbian cities.

Taken individually the buildings are architecturally interesting only in decoration, certainly not in function or structure. It is in a larger context of mass, space and site that these cities have architectural significance. Within this context our present cities with over-emphasis on individual buildings lose significance.

Of course differences in function exist between Mayan and modern cities. Fundamentally the Pre-Columbian city was an outdoor gathering space, a gathering space for the performance of the dramatic religious rites of an agricultural people. The city's function, therefore, went beyond only that of holding people to that of the expression of a special place of excitement and high importance—a place where man communicated and bargained with the very forces of the earth—growth, rain, sun, corn, death which his religion personified and upon which his life and culture depended. To express this function the city used the land not only as its base but as a primary part of the composition. Also groups of buildings used for astronomical observation and calculations are often placed in conjunction with elements of the landscape such as mountain peaks.

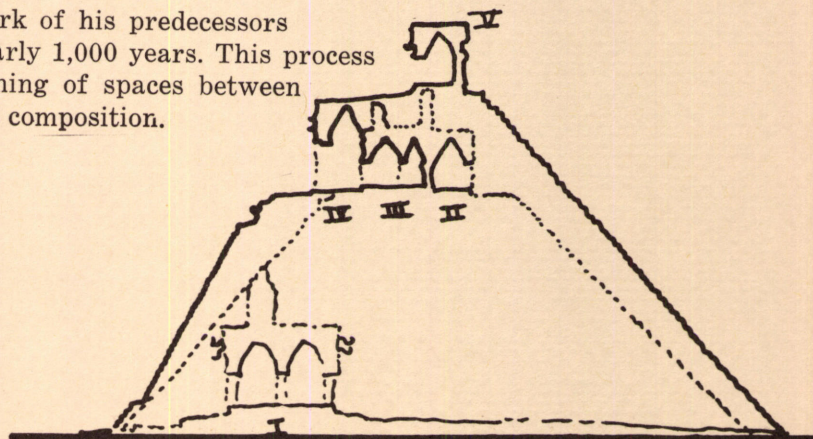
It is perhaps useful in exploring the functions of these complexes to attack them from the other direction, that is, what uses they essentially did not have—limitations in function which allowed a stronger expression of the basic function. The most important of these was the lack of need for interior space, especially that used for dwellings. Everyone including the priests preferred the thatched roof hut to the dark rooms that existed in the ceremonial cities. Although there are a few spaces definitely thought to have been dwellings in some cities, notably Palenque and Teotihuacan, most interior space was probably used for storage of the elaborate paraphernalia required for the rituals. The only interior space of real importance is in the small temples located at the tops of the temple platforms from which some of the rites were conducted.

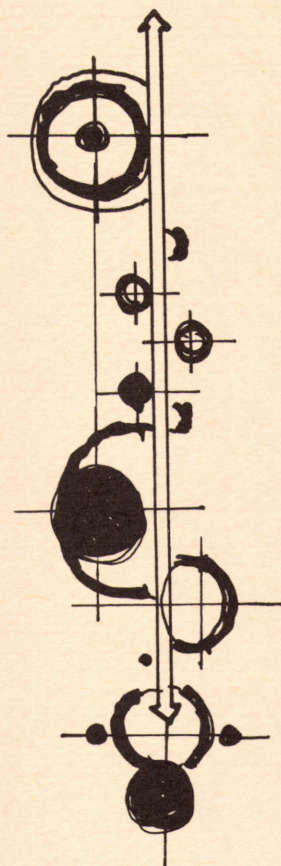
Another limit in function was that of defense. During the classic period defense was not necessary. It was only after the abandonment of the classic cities and the rise of the Toltecs that defense became a factor providing cities with adjoining citadels and in a few cases in Yucatan, walls.

These functional limitations coupled with severe limitations of structure and materials enabled the builders to use the most fundamental components of mass, space and site to achieve a city of startling clarity and purity. For architects today, who must build in cities where the basic functions of dwelling, recreation and individual communication have been subordinated to advertising and transportation, these complexes can serve as lessons and inspiration.

Another very important difference between the modern city and these ceremonial centers is the way in which they were conceived and grew. Growth was much slower in Pre-Columbian Mexico than in a modern city. Rather than growing outwards, being mostly exterior space and mass, they could grow in layers. Masses were continuously changed and covered with larger masses which were in turn also altered. An excellent example of this is the temple platform known as the Temple of the Magician at Uxmal. It consists of five temples in layers.

Each architect built directly on the work of his predecessors so that the work was continuous for nearly 1,000 years. This process resulted in a gradual defining and refining of spaces between masses and improvement of the over-all composition.





TEOTIHUACAN

Teotihuacan is a large complex in the central plateau about 30 miles N. E. of Mexico City. The city was named Teotihuacan ("place of the gods") by the Aztecs who, awed by its massive ruins, assumed that it was built by the gods. Not much is known of its builders' identity—they are called Teotihuacanos for lack of a better name.

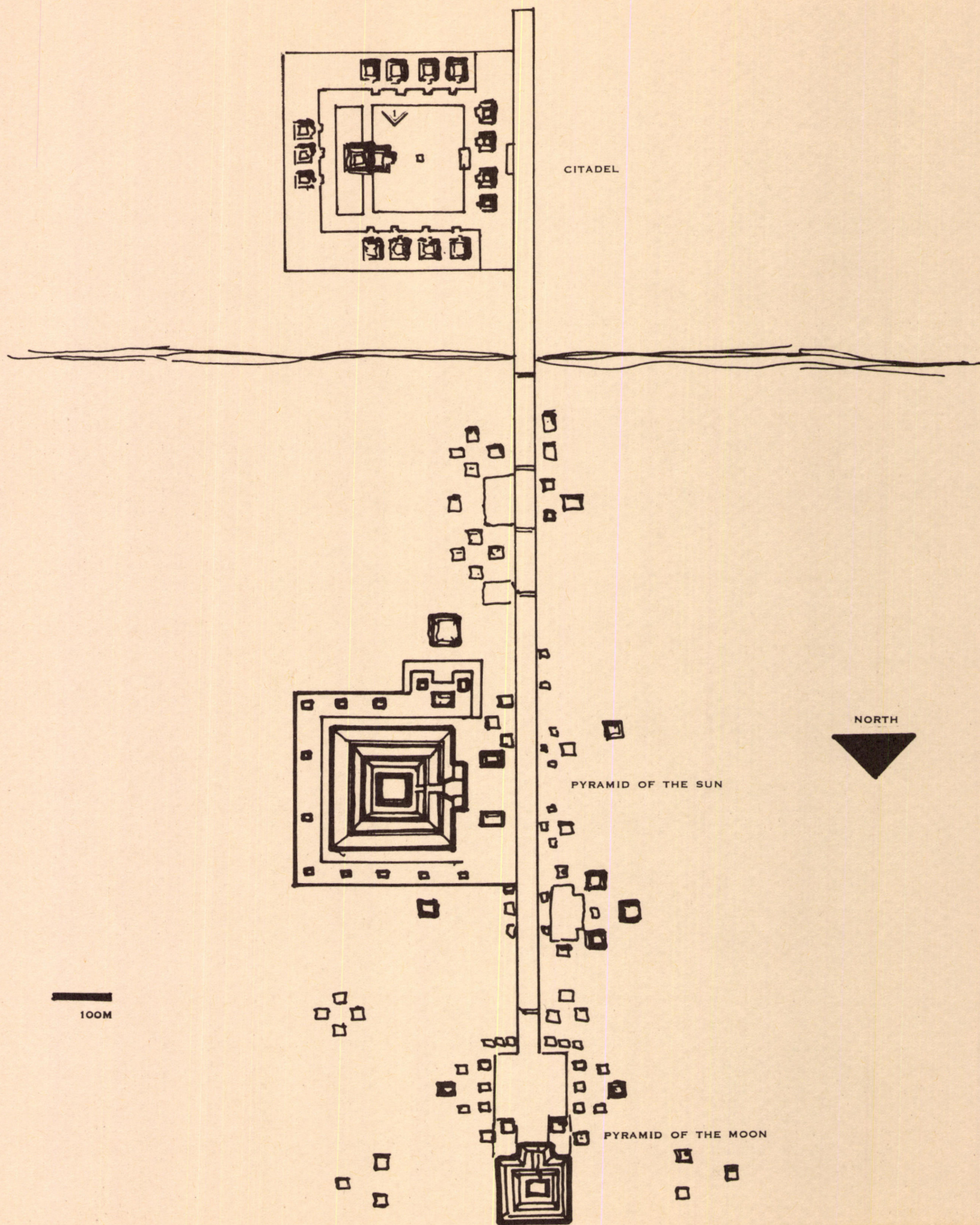
The city lies in a valley ringed on three sides by mountains typical of many such valleys in the central plateau of Mexico. Teotihuacan is organized along a major axis presently called "the avenue of the dead." This avenue starting at the temple platform, the pyramid of the moon, extends for one and one quarter miles passing an even larger temple platform, the pyramid of the sun and a group of structures known as the citadel. Its open end is aligned with a gap in the distant mountains.

This axial arrangement should not be confused with the individual building-street relationship of our cities because each mass in Teotihuacan is closely related to open courts, defined plazas and other masses to form an integrated mass-space group. These groups are the basic building blocks of the city and can be classified by three types: mass dominated, space dominated, and balanced.

Each of these groups is connected to the Avenue, being itself used as one of the courts in some cases. This is accomplished by a series of stairs which subdivide the Avenue into court-like spaces. There are three major mass space groups and many minor ones clustered along the Avenue, so that a procession along it is met with a continuous variety of mass, space and scale relationships.

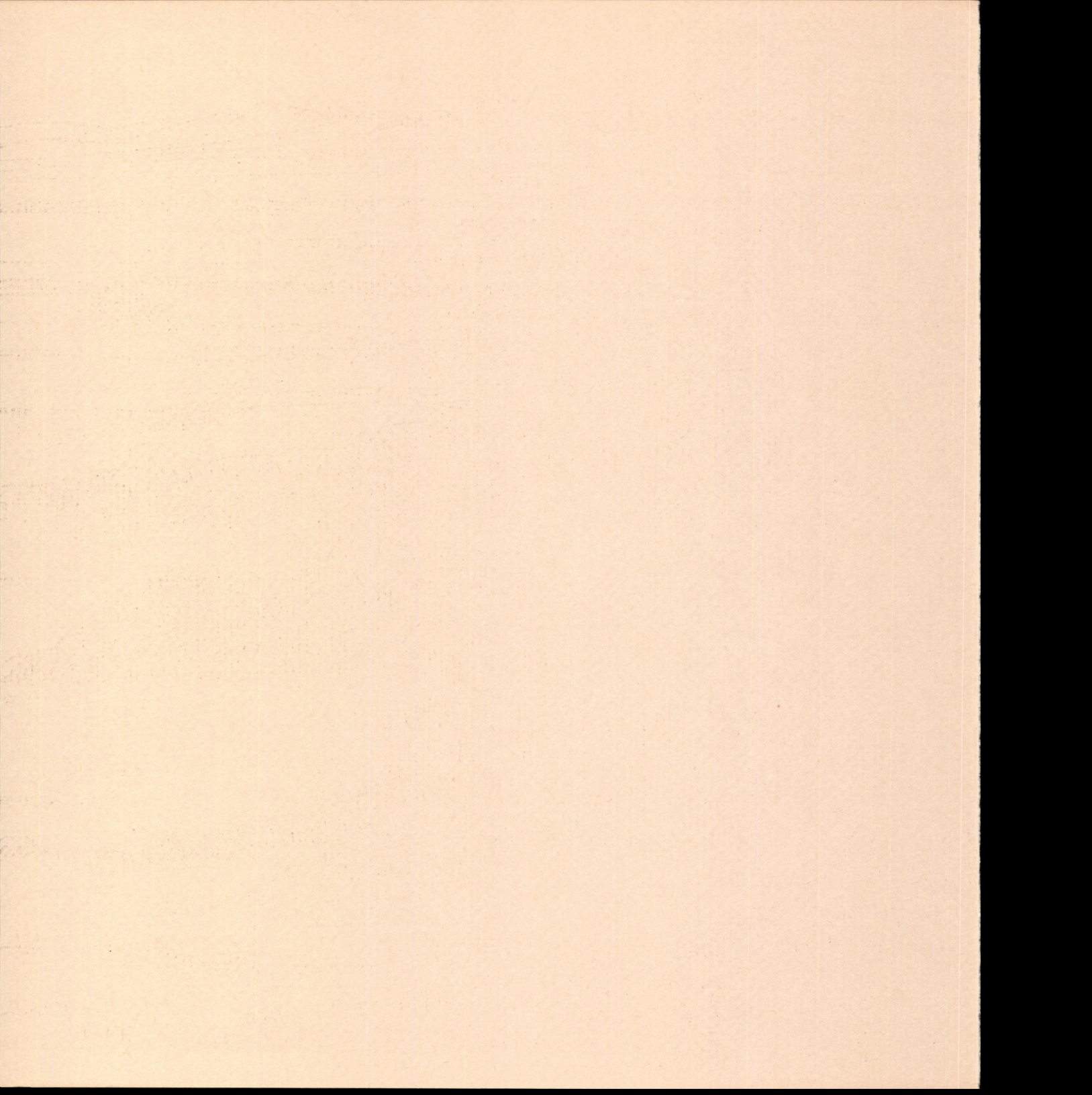
Essentially, Teotihuacan is a system of a hierarchy of mass-space groups, which descends in scale starting with the surrounding mountains to the smallest temple platform. This is done with a rational continuity which does not sacrifice variety.

At the head of this hierarchy is the surrounding valley, the mountains and the city as a whole; all of which form a mass-space









group of the largest scale. It is of simple organization, large masses ringing a space containing smaller masses. The valley with its central city does more than just reflect the surrounding mountains in its huge temple platforms. It creates a finer, more intense, image of this mass which gives the feeling of a unique world radiating concentrically from Teotihuacan, losing intensity but gaining in size as it proceeds outward.

On the next level of this scale hierarchy are the relationships between the major mass-space groups of the city. These three groups are related so that they form one mass-space group on a scale to themselves but still large enough to be on a completely different level from the numerous minor mass-space groups.

The citadel is in alignment with the pyramid of the sun and the mountain peak beyond. Some ruins exist on the peak itself, from which it is thought a fire was lighted for rituals performed in the citadel.

The third level down in this hierarchy is the relationship of mass-space in each of the major groups. It is interesting to note the degree of dominance of one element in each of these. The first major space-mass group going from North to South down the Avenue is a pyramid of the moon group. It consists of a temple platform which has a large plaza at its foot, which in turn is surrounded by smaller temple platforms. This plaza acts as a transition space for the end of the Avenue, on which the pyramid of the moon is centered. The entire group is one in which space and mass are more or less balanced.

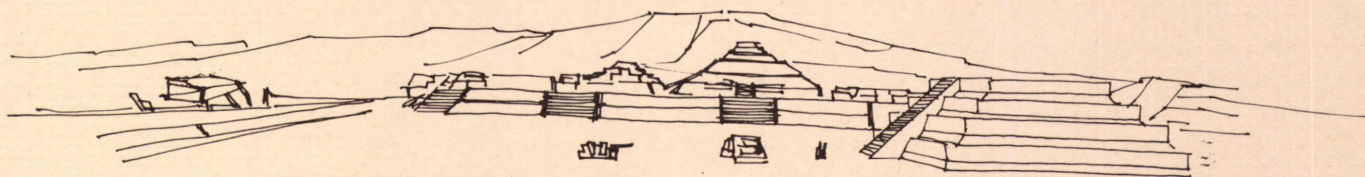
The next major mass space group contains the temple of the sun. This gigantic structure is over 200 feet high and its base measures 735 feet per side. Originally it sat on a huge paved square one quarter mile per side which was edged in smaller temple platforms. These elements created a mass-space grouping of great scale in

which mass dominated.

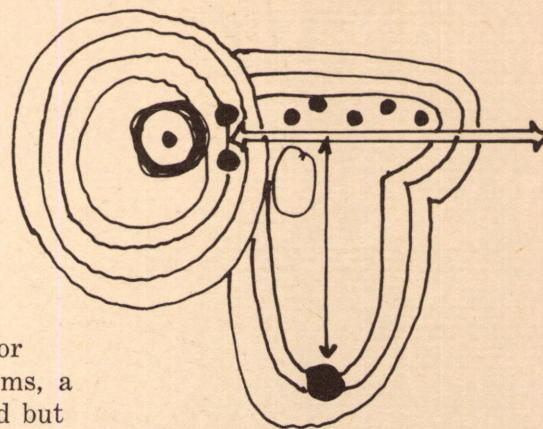
The last major mass-space group is the group near the South of the Avenue known as the citadel. It is a huge complex containing seventeen temple platforms and four distinct levels of open space. Its vast size and the relative smallness of temple platforms cause it to be a space dominated group.

On the next level down the scale are numerable smaller mass-space groups. They form a variety of relationships with the major groups. Only a few of them have been excavated to date.

Beyond this is the articulation of the masses themselves which is in most cases direct, simple and highly effective. The temple platforms are divided into horizontal terraces whose pattern is broken to emphasize the top and erase any chance of monotony. Smaller temple platforms are handled in much the same way except that the facing is arranged to create a strong shadow emphasizing its horizontal articulation. As in all Pre-Columbian architecture much emphasis is given to a fine profile of the mass elements which helped give the feeling of intensity, of a separate important place from the surrounding countryside.



XOCHICALCO



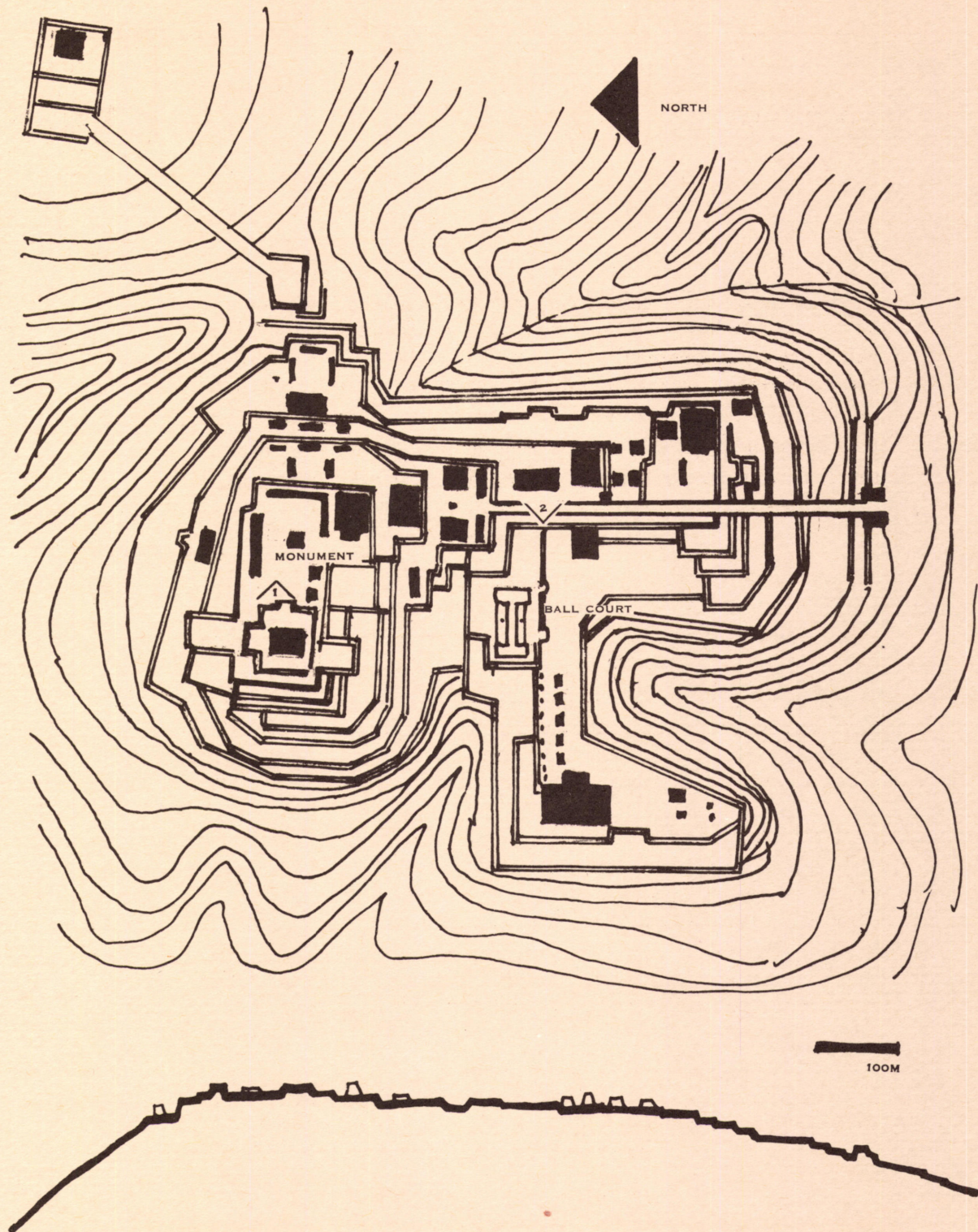
Of the four sites discussed Xochicalco is the least known for its excavation has just been started. Two temple platforms, a ball court and a few walls are all that have been uncovered but because of its organization and location, it is possible to determine some of its architectural qualities.

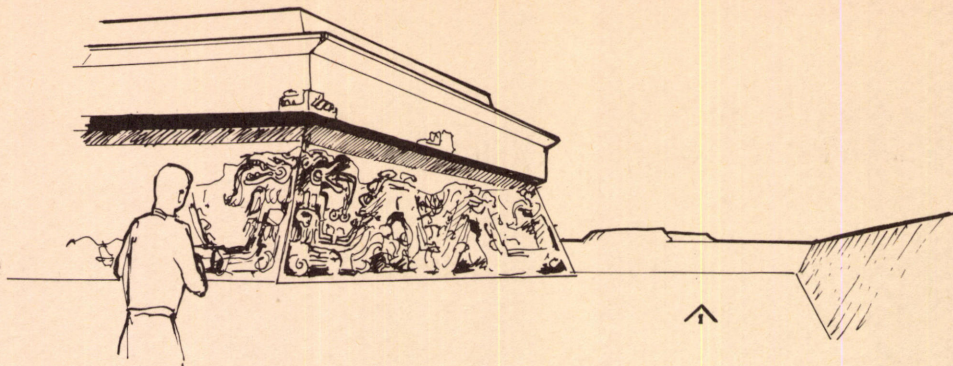
It is believed that Xochicalco was built by a people related to the Teotihuacanos or perhaps derived from Teotihuacan itself. It is also thought to have had some cultural contact with Monte Alban to the South. The ball court and a great many other features, however, show strong Toltec influences. Archaeologists hope that further excavation at Xochicalco will shed some light on the relationship of the classic cities to one another and to the succeeding Toltec culture.

Xochicalco is located in an area similar to the landscape of Teotihuacan but it is on the mountain top instead of in the valley. Xochicalco contains an axial avenue like Teotihuacan but here all resemblance stops. Its scale is different, its organization off the axis is composed of different elements and it is organized to provide a sequence of events in time rather than a hierarchy of scale. This sequence has a definite beginning and continues as the visitor travels up level after level to a climax at the top of the mountain.

The axis avenue begins about 400 feet beyond the city and becomes quite steep so that one soon finds himself on a high level overlooking a whole series of large terraces. As in Teotihuacan, he experiences a great many avenue oriented relationships except that here he is looking down on them and beyond into a valley far below.

While in Teotihuacan it is the mass-space group that was the basic building unit, in Xochicalco it is the level terrace. These terraces follow the contour lines of the peak, freezing them into a crisp overlapping system of level spaces. These terraces contain

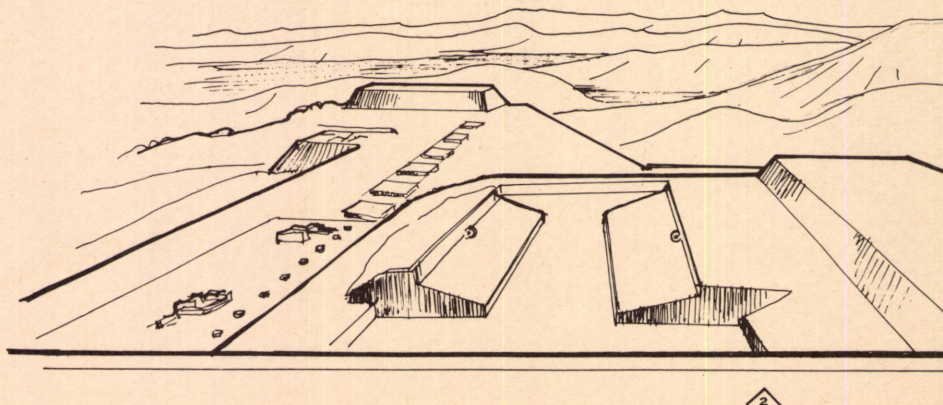


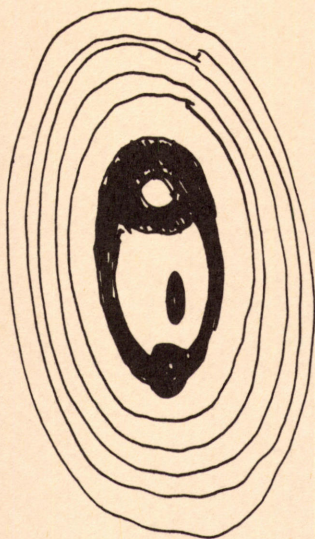


courts cut into them and masses built out of them but neither really dominates the terraces. From the middle point of the avenue-axis these terrace groups form a many-leveled series of various relationships. On the right side of the axis they run parallel to it and contain many temple platforms and courts, while on the left side they flow out along a finger ridge onto a smaller peak forming a secondary axis which is ended by a large temple platform. In this terrace group is the excavated ball court.

Continuing along this axis-avenue we come to its end at a terrace higher than the axis, studded with several temple platforms which accent the end of the avenue and form an entry into the main complex consisting of concentric levels of terraces. Upon climbing these terraces the visitor reaches the climax of the composition, a space containing a small ornate monument of an extremely fine profile. This space is surrounded by temple platforms so that one feels that it is sunken into the terrace. This sudden change of direction, with the removal of the view, creates an impact which emphasizes this space as the climax of the city.

Xochicalco's relation to the over-all site is again mostly one of intensifying the natural forms that surround it and out of which it grows.





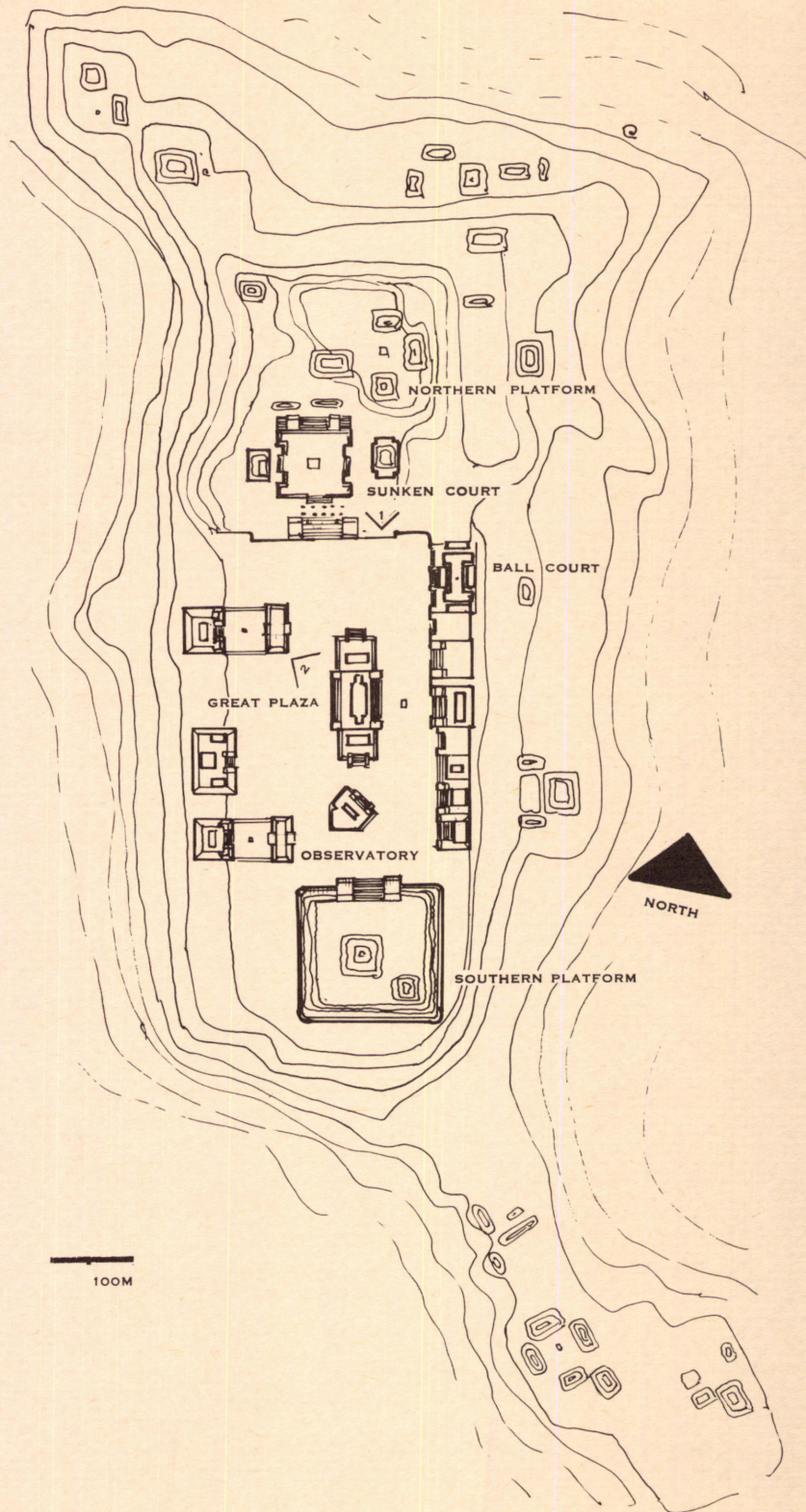
MONTE ALBAN

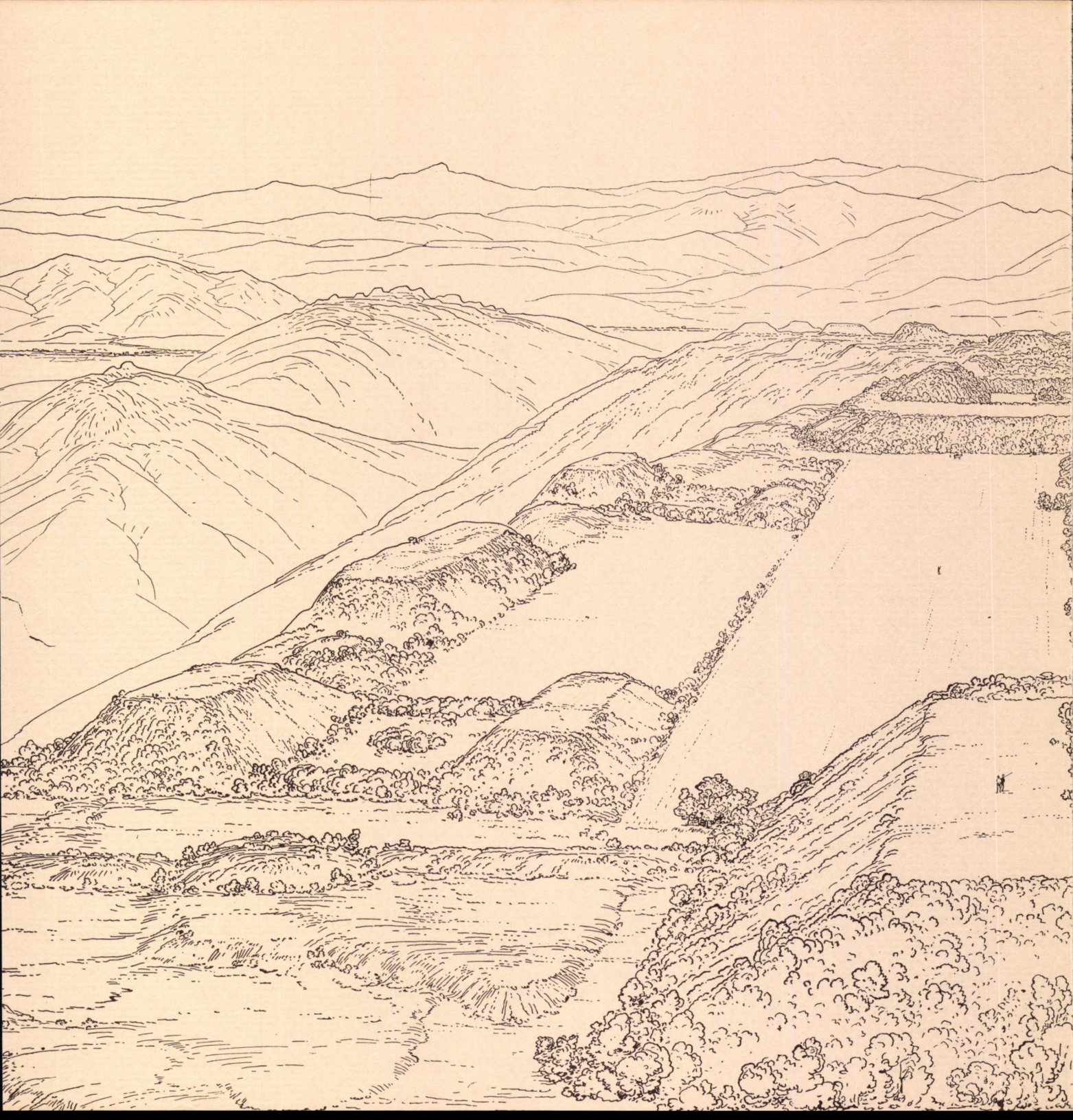
Monte Alban is located in an area about 300 miles south of Mexico City known as the Valley of Oaxaca. Monte Alban was the ceremonial city of the Zapotecs who still inhabit the valley. After it was abandoned at the end of the classic period it was used as a graveyard by the succeeding Mixtec tribes. The city was never again used as a ceremonial center and by the time of the Spanish Conquest it was so well covered with rubble and earth that the Spanish never knew of its existence.

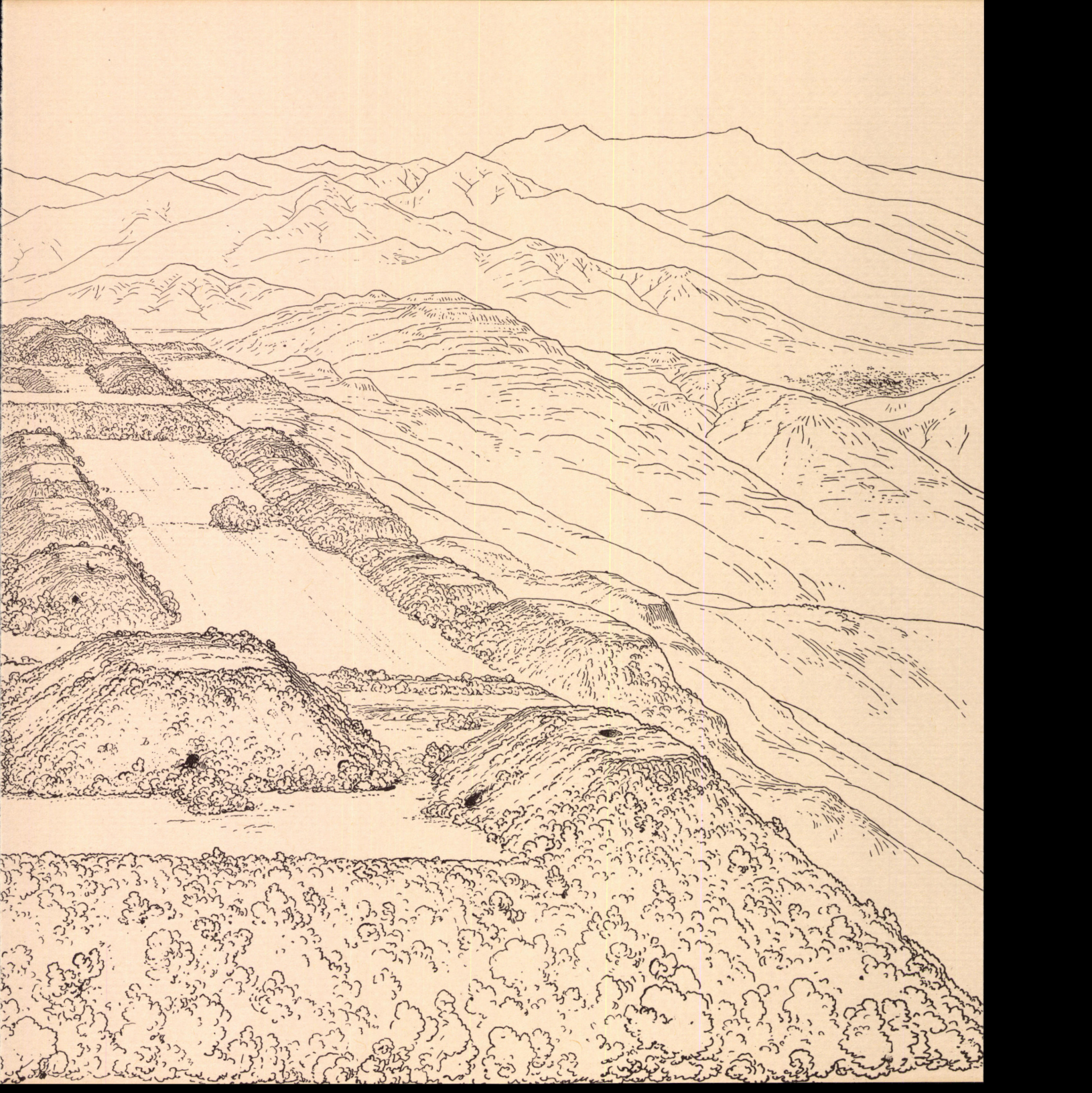
Although located on a mountain top like Xochicalco, Monte Alban has no axis or terrace systems. The only organizational resemblance between the two sites is that the same device used for the achievement of the climactic space in Xochicalco is used on a much greater scale for the entire city at Monte Alban. The mountain climb from the valley serves the same function at Monte Alban as the climb over the terraces did at Xochicalco, preparing the visitor for the final space. There is no single approach to Monte Alban. It can be approached from any direction and entered from three sides.

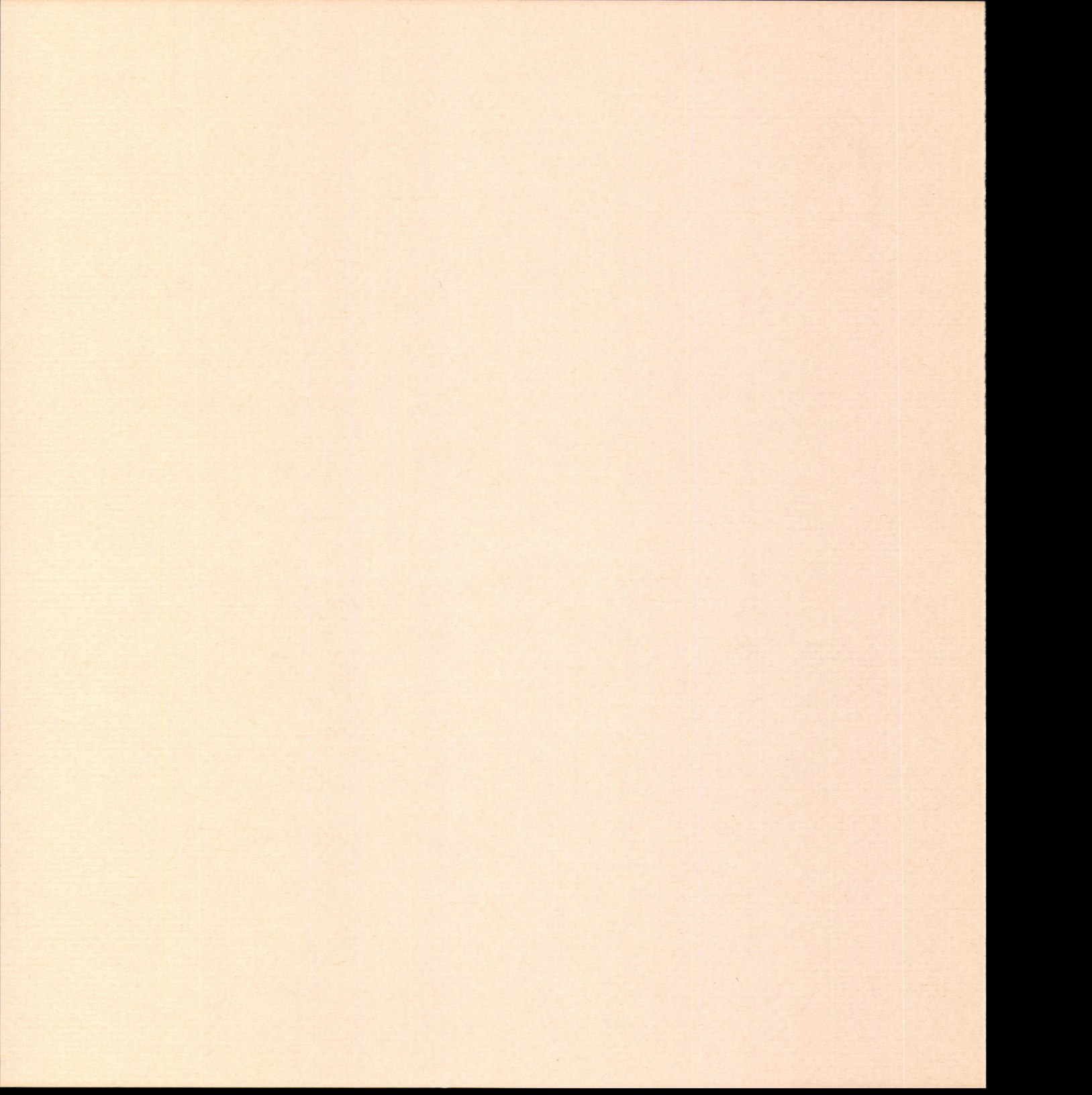
During the approach up the mountain one cannot see any sign that a city exists due to the slope of the mountain and the irregularity of the terrain. Even close to the top the visitor sees only the backs of a few temple platforms in line, but when he walks between these platforms he finds himself in a huge space. Here all the unevenness has been removed or covered with structures, and the mountain appears to have been cut off, leaving a perfectly flat site for the location of the city. This huge space 1,000 feet by 650 feet is lined with structures defining a rim for the great plaza.

There are several groups of masses which form the rim facing the plaza and the use of stairs expresses this relation. One such group is a row of six masses side by side forming the western side of the great plaza. This wall of structures contains a ball court and several small temple platforms. Continuing around the plaza, we







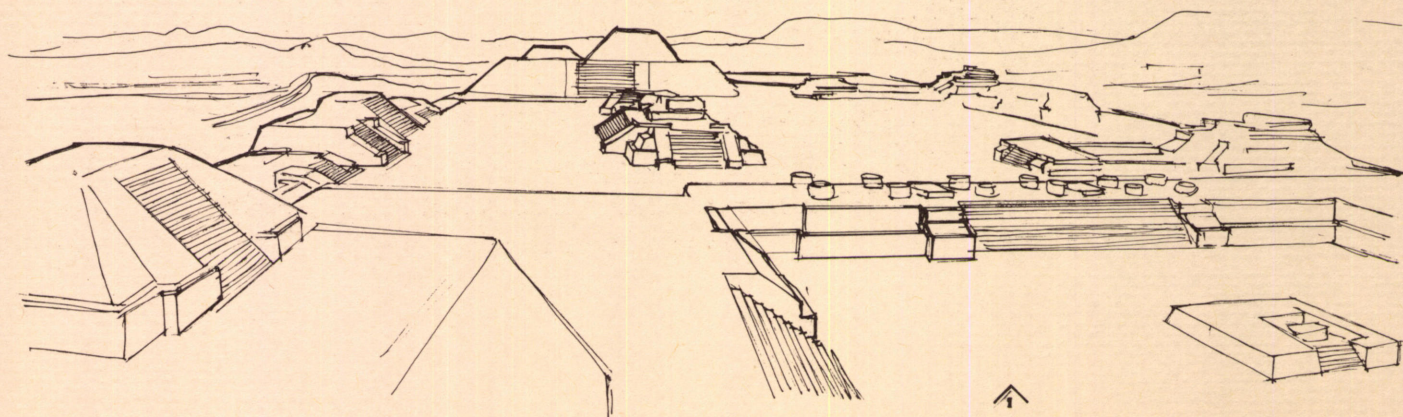


find that a very large temple forms the entire southern edge of the plaza. Two smaller masses are located in the middle of the plaza, one of which is an observatory aligned at about a 45° angle from all the other buildings, apparently for reasons of astronomical sightings. The masses are not large enough visually to break the plaza into two spaces but rather accentuate its vastness. The east rim of the plaza is composed of three structural groups, two of which are mass space groups containing a small temple platform with a patio between it and a larger temple platform.

At the northern end of the plaza is a huge terrace approximately 30 feet higher than the plaza and connected to the plaza by a flight of steps. This terrace contains a sunken court—still on a rather large scale though not comparable to the plaza itself. It is ringed with small temple platforms set back from its edge.

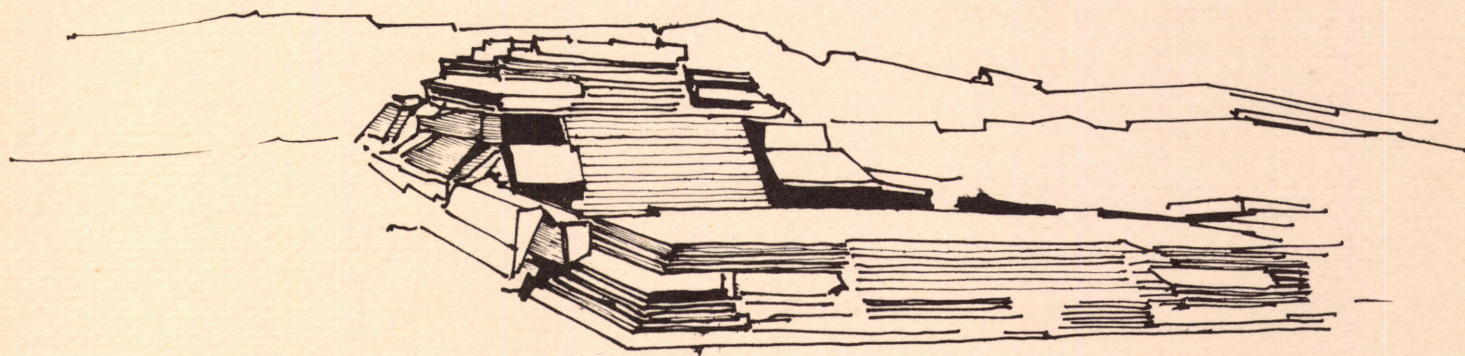
The hierarchy of scale at Monte Alban is one of alternation of mass and space, each time descending in scale.

Space	valley
Mass	the mountain
Space	the great plaza
Mass	the structures that rim the plaza
Space	the sunken court in the northern terrace
Mass	structures around the sunken court



Because the main organizational unit is the great plaza, individual masses play an important role in the composition, for it is they that define this space. After the initial impact it is the individual mass on which the visitor will concentrate until he reaches the sunken court. The Zapotecs handled the articulation of their masses differently from the way masses were handled at Teotihuacan and Xochicalco. The surface of the mass is divided into panels and planes which provide strong areas of shadow and light which seems to fracture the whole mass into a composition of angular planes. This device is especially strong in the large stairways emphasizing their relation to the great plaza.

Of all the sites Monte Alban has the simplest, most direct organizational structure, yet because of this location, it required great daring and imagination. There is not a site in Mexico which has more impact.

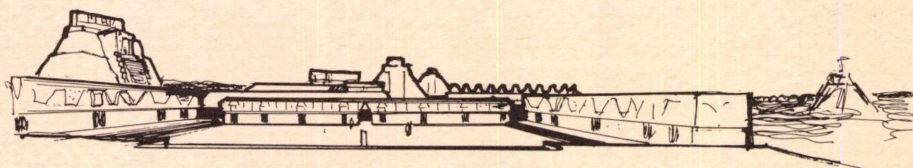
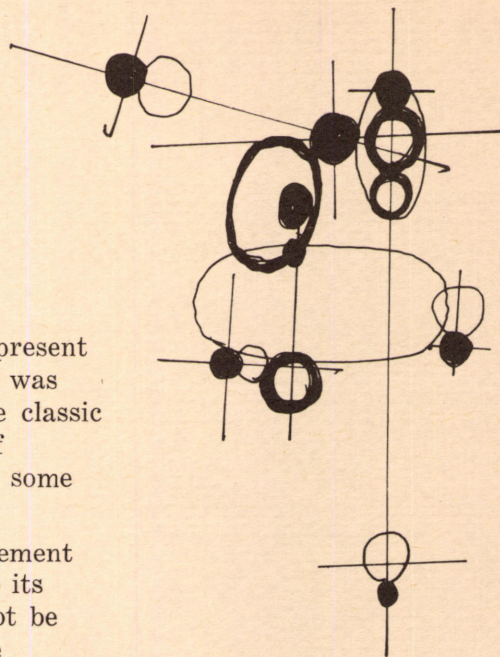


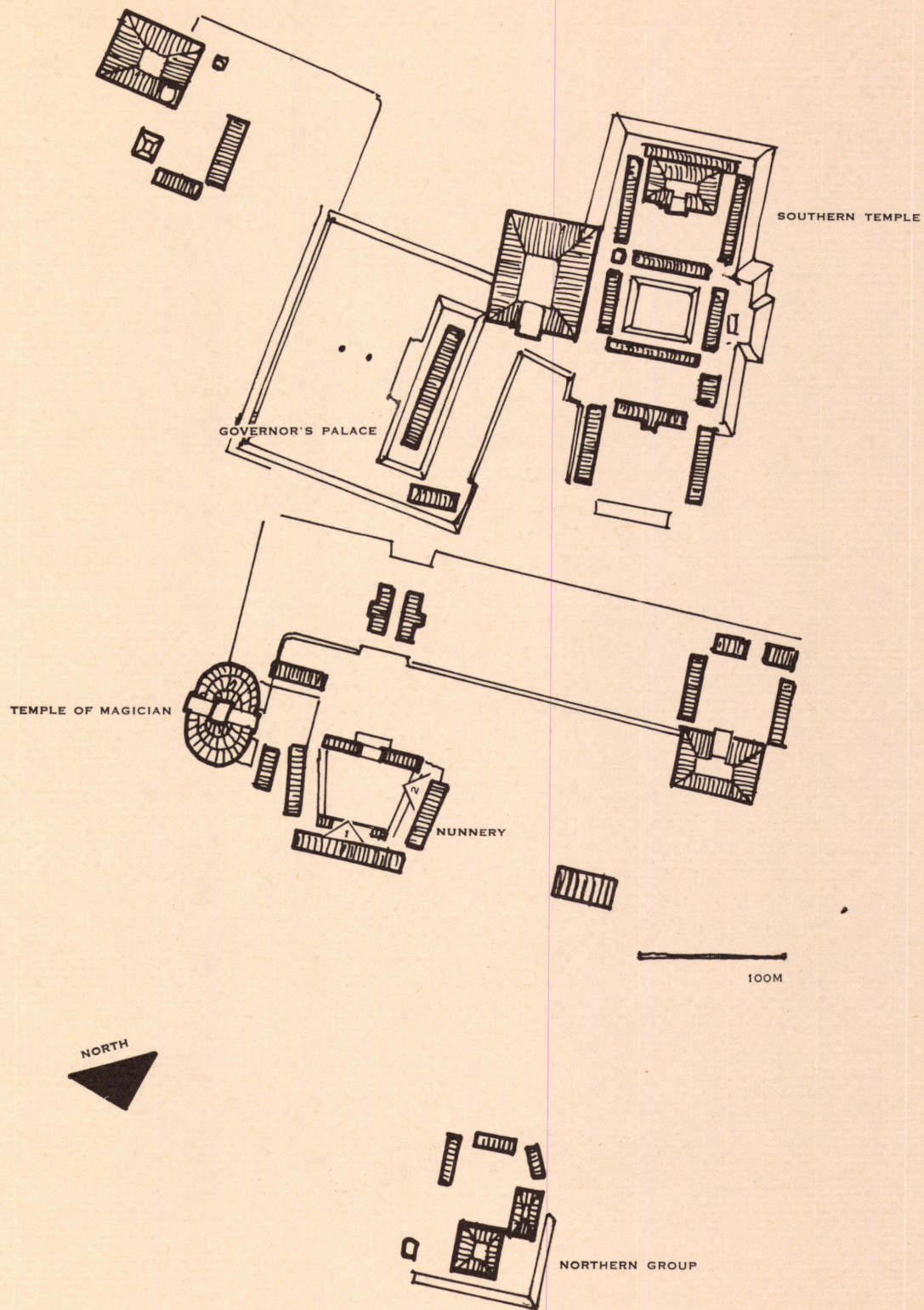
UXMAL

The Mayan city of Uxmal is located about 55 miles from the present city of Merida in Yucatan. Most of the architecture of Uxmal was built during the classic Mayan period. After the fall of the classic culture it is believed that Uxmal was occupied by a people of northern origin called Xin who built very little, adding only some decorative elements to the city.

Uxmal offers nothing new in basic organizational arrangement and has none of the spectacular landscape to incorporate into its design, the terrain being flat jungle. However, Uxmal cannot be matched for its sublimity, complexity and refinement—three characteristics in which the Mayan excelled.

Like Teotihuacan Uxmal's basic building units are mass-space groups but these groups have a much more human scale than Teotihuacan and a much greater variety of richness. The obvious was very seldom done. Each space is related in such a way as to obtain a composition informally composed, of subtle interest. This is seen in the Nunnery and Temple of the Magician complex. The Nunnery itself is a mass-space group consisting of four similar buildings around a court, the building of the Northern edge being higher, enabling a person standing on its terrace to look over the opposite buildings into the large plaza beyond to the next mass-space group. The Nunnery is combined with the temple platform known as the House of the Magician and its small court at its foot. Instead of aligning the platform with the center of the Nunnery court, the axis of the platform and its court is aligned with the south building of the Nunnery complex creating

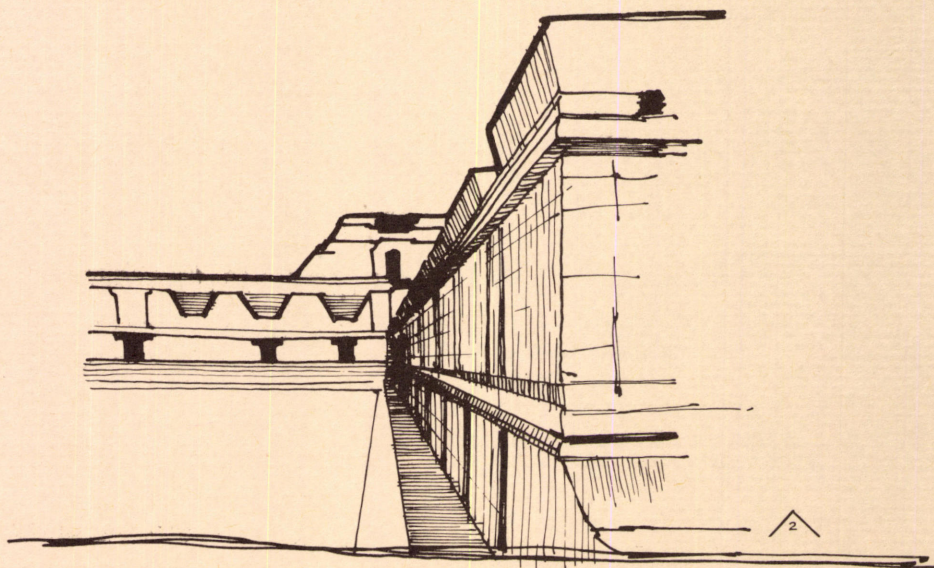


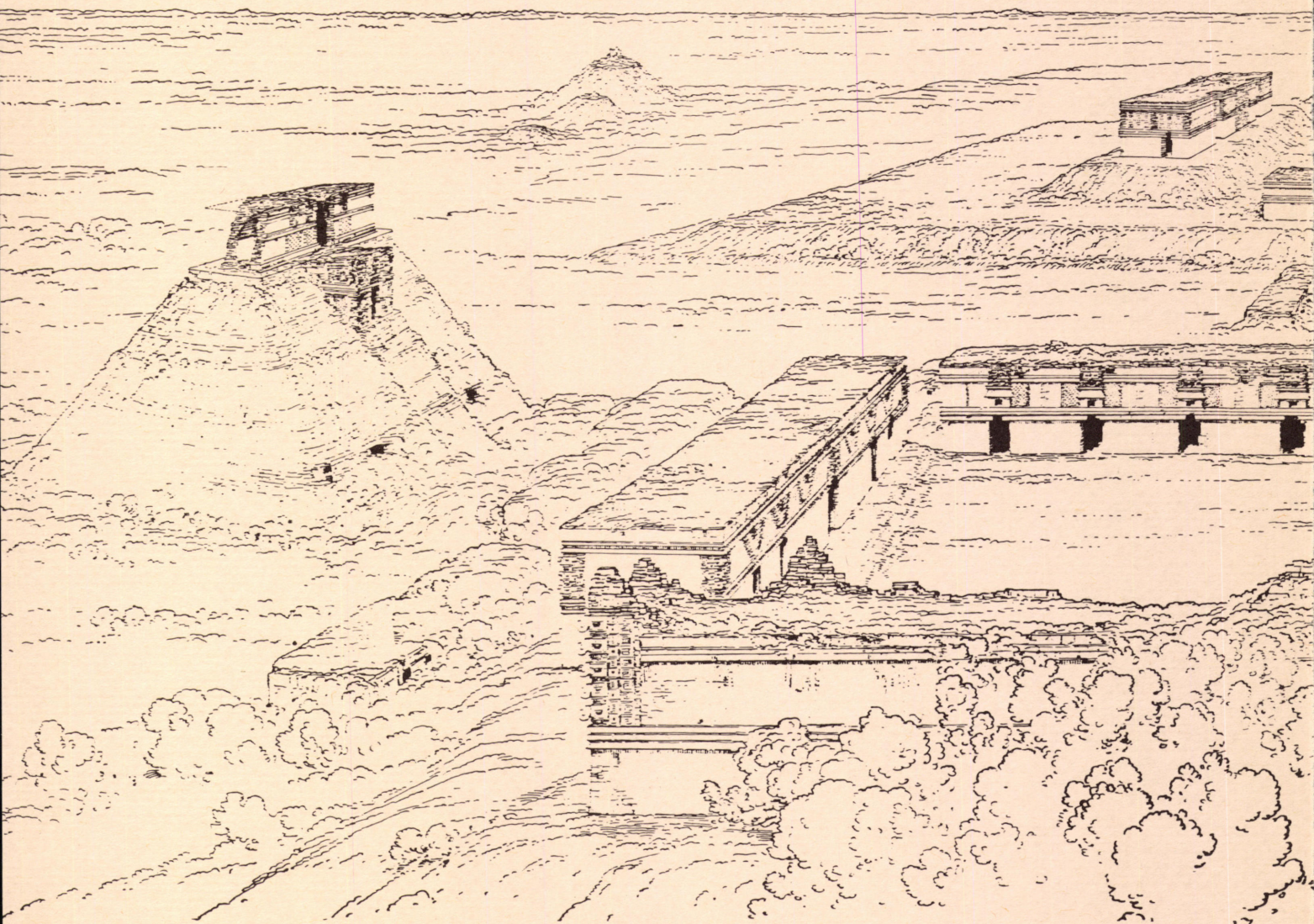


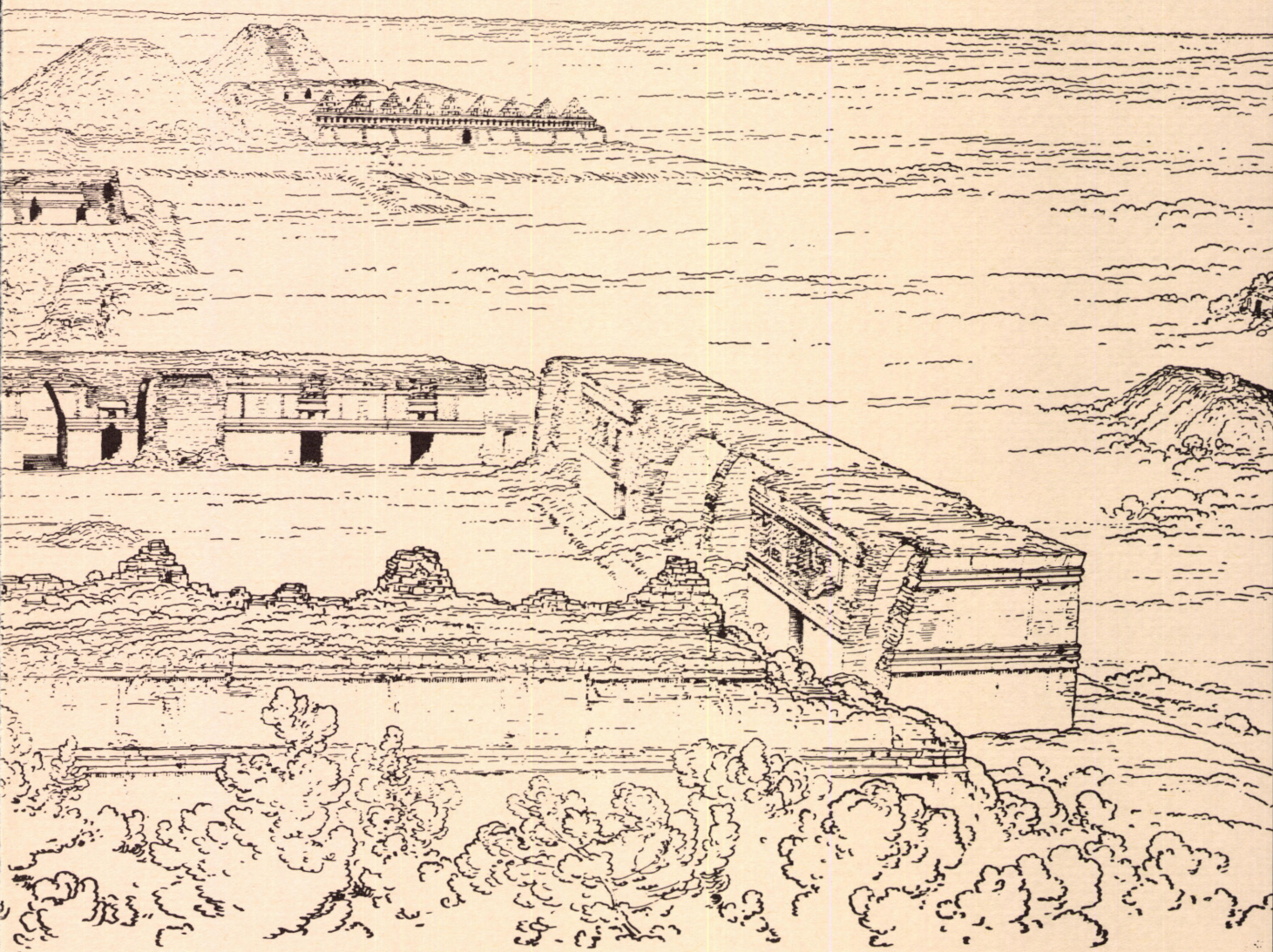
a much more subtle perspective from the court. The temple platform and its court is also a good example of this refinement and displays the Mayan's interest in relations which go beyond the obvious. The temple platform is not symmetrical but noticeably steeper on the court and Nunnery side. This emphasizes the space of the court and increases its integral relation to the large mass of the platform. This refinement is carried through the whole composition down to the last detail. Even the sculpture is used architecturally. Rows of rain god masks edge the steep steps from the court to the main temple on top of the platform. The temple forms a mouth of a larger rain god mask.

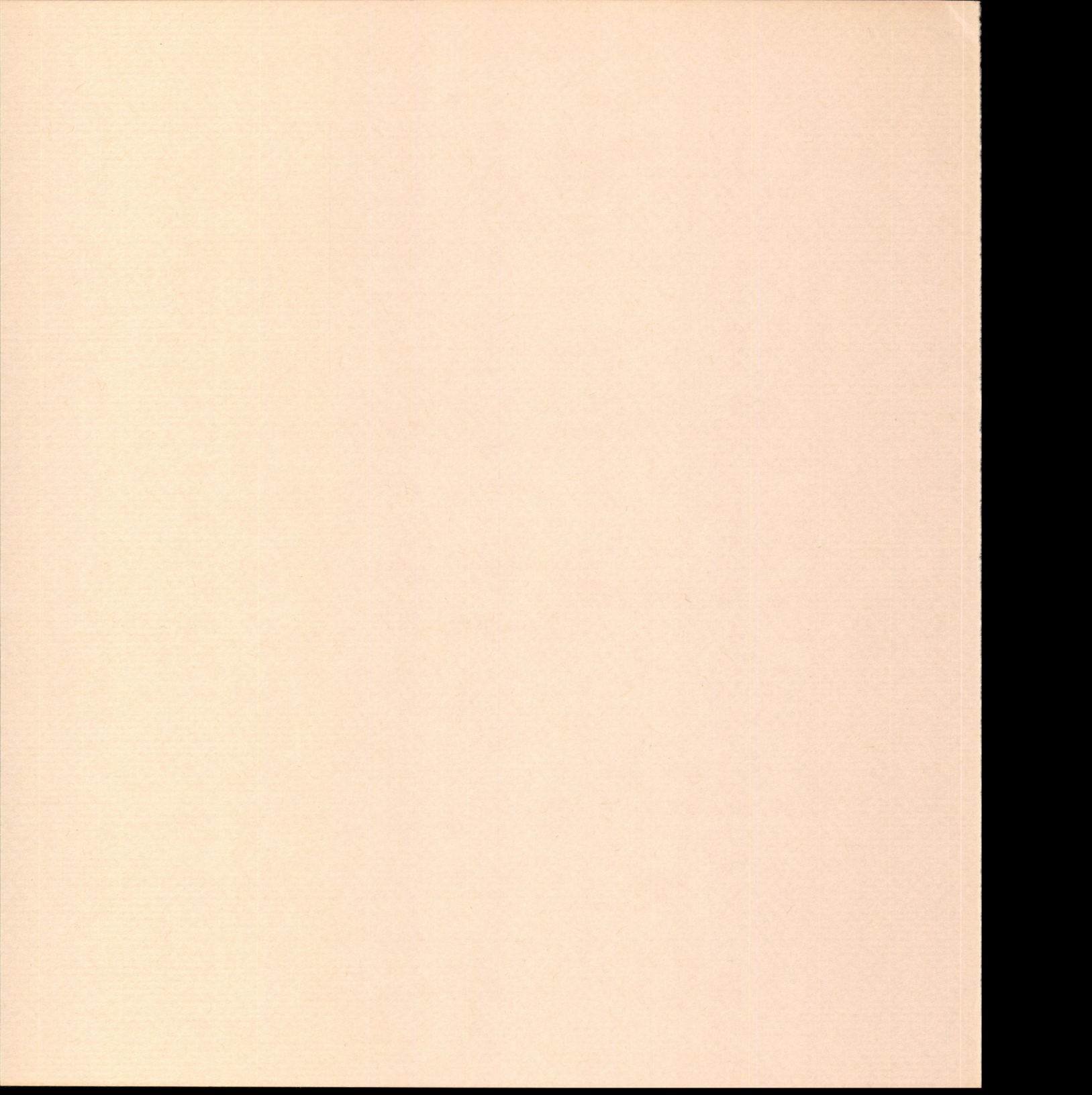
Because this refinement is carried out so thoroughly, Uxmal had some individual building masses that are masterpieces of proportion and the integration of sculpture, as the Governor's Palace. This is, however, never done at the expense of the mass-space group relationship.

The relation between the mass-space groups that comprise the whole city is also quite varied and complex. Uxmal is not organized







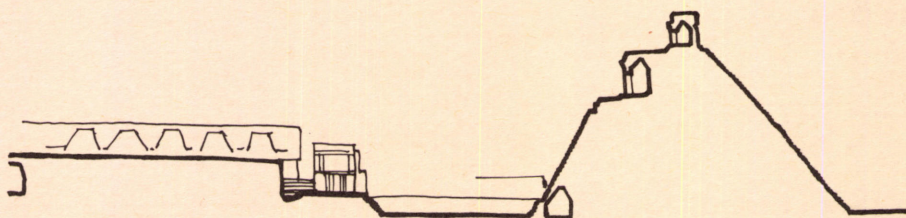


around one axis or main space. There is a host of major and minor axes between mass-space groups, between high objects and low objects, and within mass-space groups themselves. The pattern of these axes is such that again the obvious is avoided. Long axes are the weakest and increase in strength as the length decreases.

Uxmal for all its wonderful subtle relationships cannot really be appreciated as a whole without including the surrounding landscape, perhaps the largest contribution to the city's richness and complexity. These qualities oppose the simplicity of the monotonous landscape which surrounds the city so that the landscape helps the composition of the city and the city helps the landscape. The contrast of these two gives Uxmal its strength and impact as a whole composition.

Therefore, we see that Uxmal too uses the site as a main factor in its design though in a completely different manner from the other cities discussed.

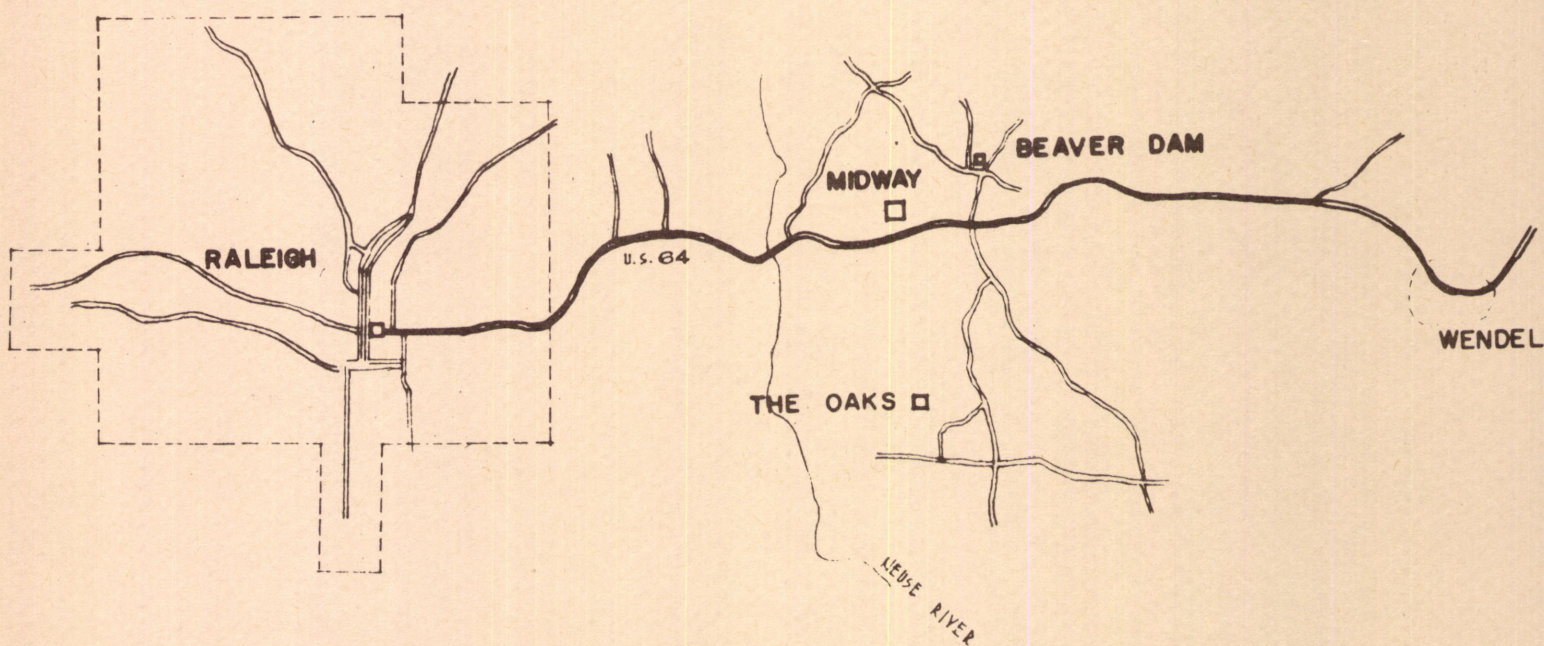
Uxmal is in many ways much different from the other cities for it goes beyond them in depth and refinement. Some parts of the other cities which appear so pure and direct by themselves almost appear crude and obvious when compared to Uxmal.



The essential components of these compositions, mass and space, were the same and the function of each city was identical, yet the result in each case is completely different. The largest variable causing this difference in the site. The landscape and terrain in each case set the theme for an idea to be expressed; importance in the valley, climax in the mountains, contrast with the flat jungle.

It is the expression of this idea of starting with the whole landscape, horizon to horizon, and carrying it through the city down to its smallest part while still maintaining the basic function, that these cities achieve architecture, not only on the individual building level, but on the city level as well. There seems to be a vital, fundamental lesson for modern man in this city-wide architecture of Pre-Columbian Mexico.

MEASURED DRAWINGS OF MIDWAY PLANTATION

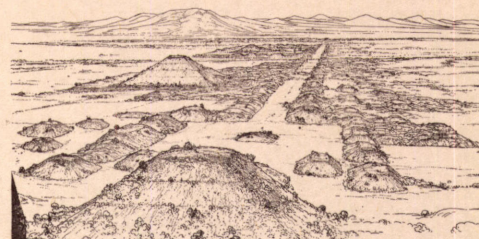
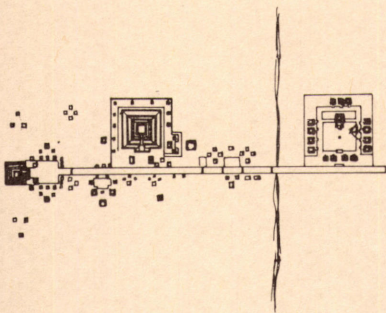


These drawings were prepared by Joe L. Nassif, Allen G. Mills, and
Howard R. Garriss
The introduction is by Betty Silver.

CITY

TYPE OF SITE

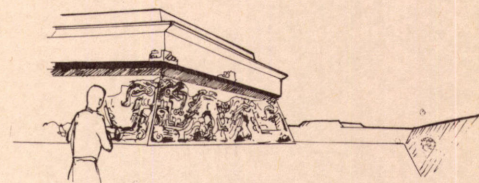
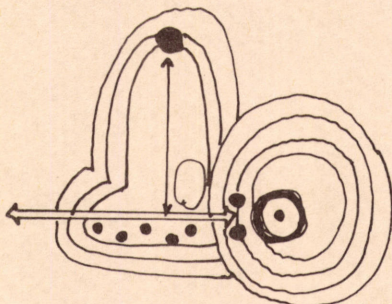
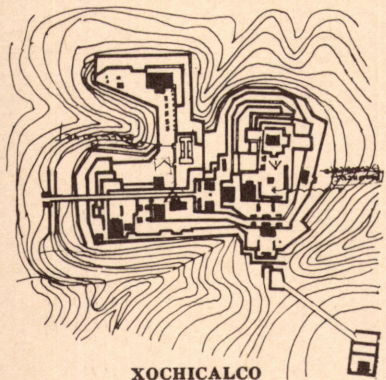
RELATION TO LANDSCAPE



TEOTIHUACAN

Valley

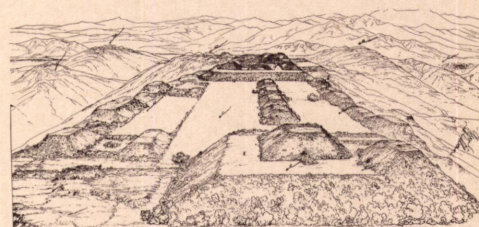
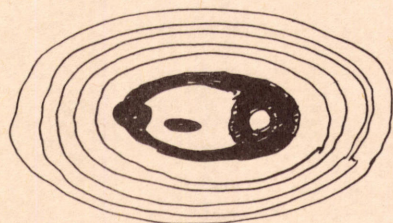
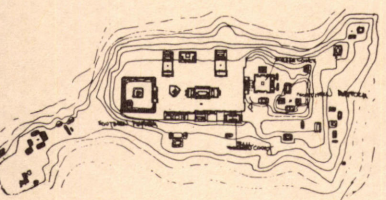
Reflection and Intensification of Surrounding Mountains



XOCHICALCO

Mountain

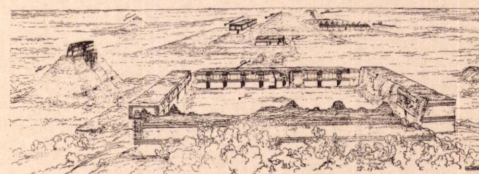
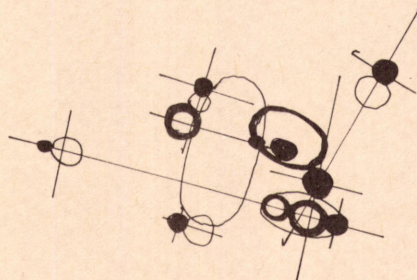
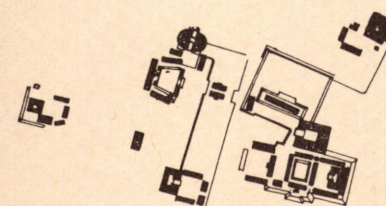
Incorporation and Intensification, then Seclusion from Mountain Base



MONTE ALBAN

Mountain

Incorporation, then Contrast and Seclusion from Mountain Base

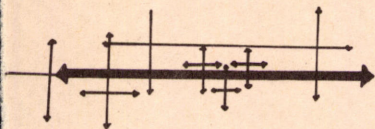


UXMAL

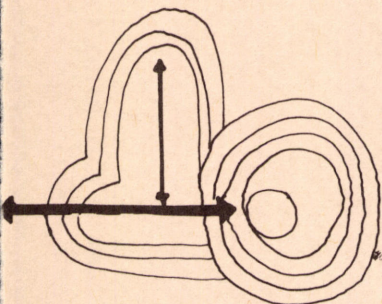
Jungle Plane

Complete Contrast with Monotonous Landscape

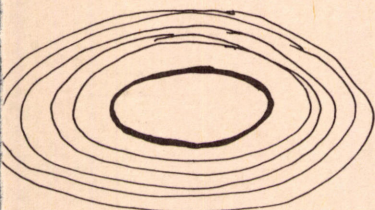
ORGANIZATIONAL MEANS



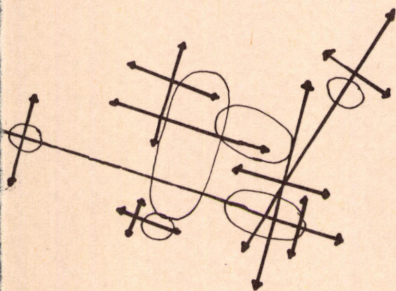
Axial



Axial and Successive Level



Central Space

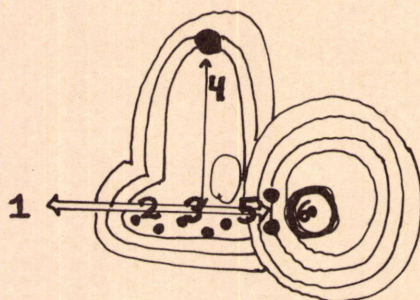


Multi-Axial and Spacial

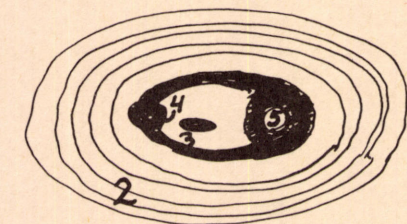
HIEARCHY OF ARRANGEMENTS



Scale of Mass-Space Groups

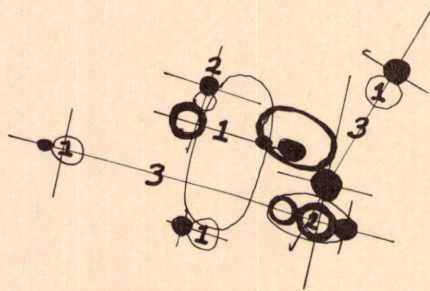


Sequence of Events



1

Sequence of Alternation of Space and Mass

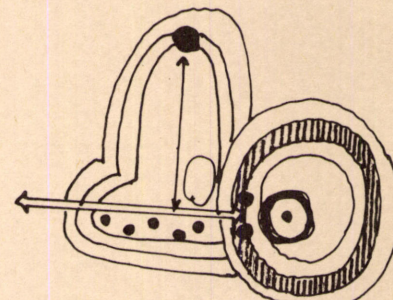


Strengths of Axis

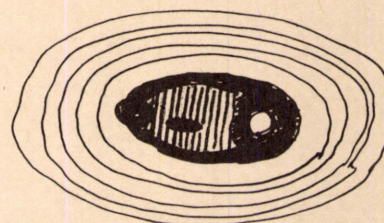
BASIC BUILDING UNIT



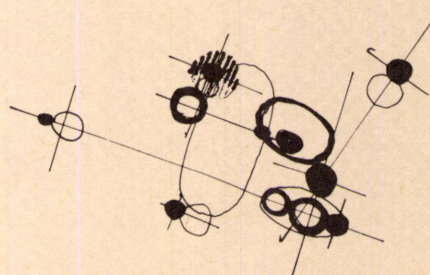
Mass. Space Group



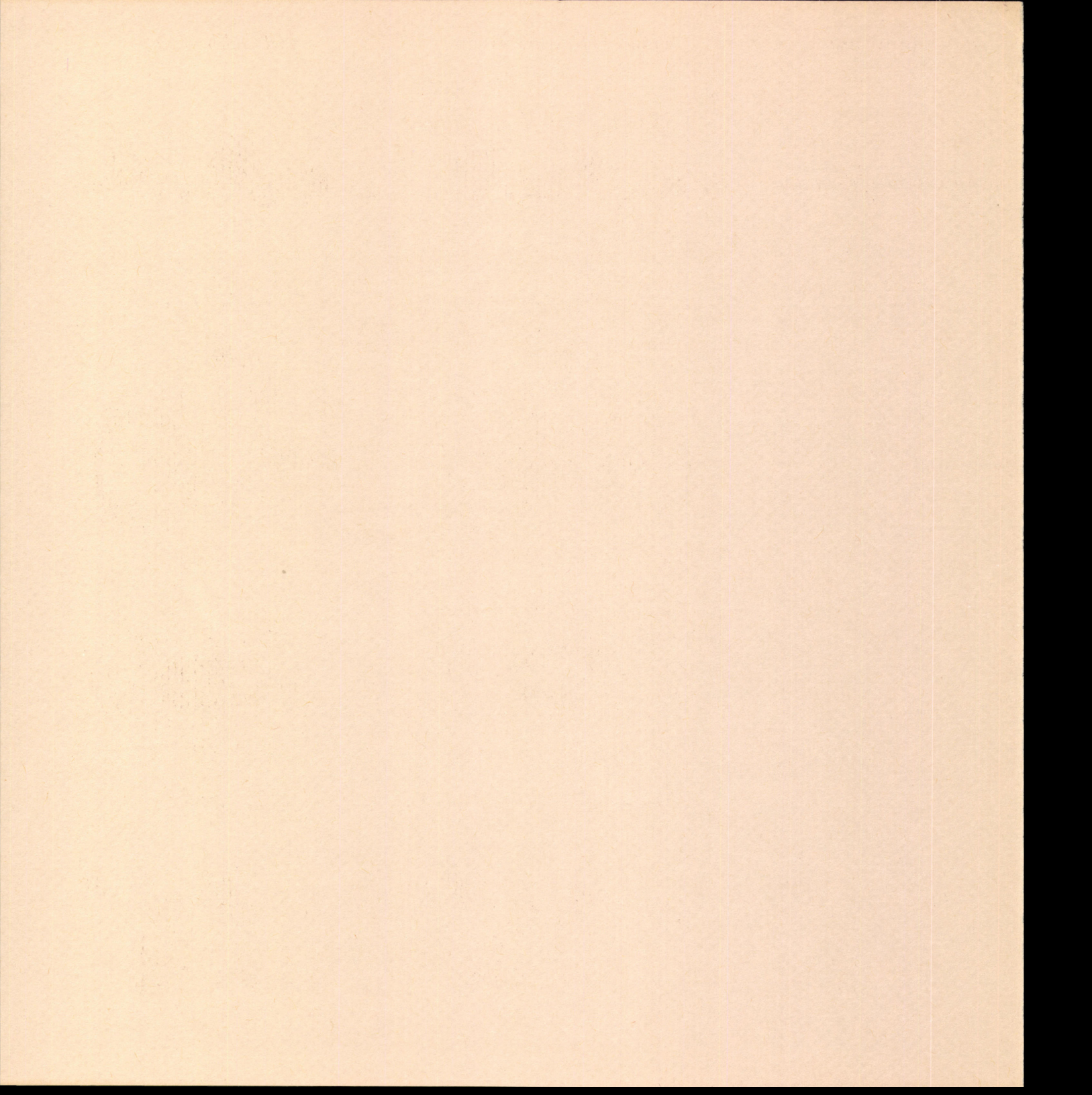
Level Terrace



Great Level Plaza



Mass-Space Group



About 1730 John Hinton of Chowan County took up extensive holdings bordering on the Neuse River in what is now Wake and Johnston Counties. John Hinton's descendants built a number of homes in this area during the 1700's. One of his grandsons, David Hinton, was a large landowner and built his home called "The Oaks", still standing, located in eastern Wake County.

David Hinton's son, Charles Lewis Hinton, was Treasurer of North Carolina 1839-43 and 1845-52. His portrait hangs in the State Treasurer's office in the Capitol.

Charles Lewis Hinton's son, David, married a sister of Governor Elias Carr of Edgecombe County, Mary Boddie Carr. "Midway Plantation", located about seven miles east of Raleigh on Highway #64, was built for David and Mary Hinton, midway between two other Hinton plantations. The house was completed in 1848 according to a letter which tells of life on the plantation in the summer of 1848, the first year that the house had been occupied.

The original plantation consisted of the main house, the kitchen in the yard, a school house, commissary, doll house, coach house and barn, all of which are still standing. In addition, a chapel where David Hinton was baptized has been converted to a tenant house, also a wash house, smoke house and slave quarters which no longer stand, were part of the original grouping. The first water works in Wake County were installed at "Midway" with a large water storage tank in the attic of the kitchen. Water was pumped by slaves each day to fill the tank and was piped into the house. (Recent renovations have uncovered original water pipes and cutoffs below frostline in the yard.)

David Hinton, builder of "The Oaks" died in 1850 and his son, Charles Lewis Hinton, died at "Midway Plantation" in 1861. Both are buried in the family graveyard at "The Oaks". David Hinton II and wife Mary Carr made their home at

"Midway" died there and are buried at "The Oaks".

In the spring of 1865 when a detachment of Sherman's army under General Logan marched on Raleigh after the Battle of Bentonville, they passed over the Tarboro Road which ran by "Midway Plantation". At the time Major David Hinton was away in the Confederate Army and his wife, Mary, and the children had to flee to Raleigh for safety. It is reputed that the family silver was buried under a fallen tree and the gold in a tin box was thrown into Hinton's pond. The silver was recovered and the pond drained to recover the gold when the Yankees had left.

The wine cellar at "Midway" was invaded and the Yankee soldiers, intoxicated, attempted to burn the house but were prevented by their Colonel. However, the Yankee troops destroyed some portraits and mutilated others. A portrait of Mary Boddie Carr (Mrs. David Hinton) was used as a saddle blanket and badly slashed with a bayonet. However, it was recovered and is now in the parlor at "Midway". Some furniture and books which had not been removed were destroyed along with all windowpanes, doorknobs and locks. The Yankees burned the gin house and cotton press on the plantation containing about 150 bales of cotton and confiscated all livestock.

After the War, David and Mary Hinton and their children, Charles, Jane and later Mary, lived at "Midway". Charles married Bessie Cain of Hillsboro and lived at "Midway" until his death in 1930. His daughter, Bessie Hinton Silver, presently resides at "Midway". Jane married and moved to South Carolina. Daughter Mary Hilliard Hinton, unmarried, lived her life and died at Midway in 1961 and is buried at "The Oaks". She inherited "Midway Plantation" from her parents and at her death she left it to her great-nephew, Charles Hinton Silver, who presently lives there with his wife and three sons.

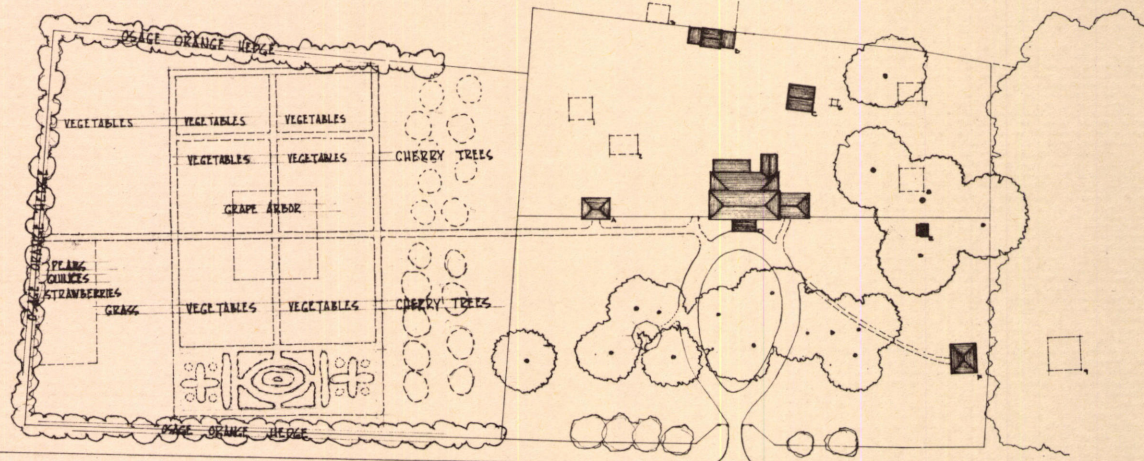
LEGEND

EXISTING

- A SCHOOL
B CARTIAGE HOUSE
C KITCHEN
D MAIN HOUSE
E DOLL HOUSE
F EAST OFFICE

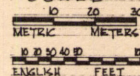
RECONSTRUCTED

- 1 LOOM HOUSE
2 STORAGE HOUSE
3 SMOKE HOUSE
4 SLAVE HOUSES
5 STABLES
6 WELL HOUSE
7 ICE HOUSE
8 POTATOE HOUSE
9 COTTON GIN



SITE PLAN

SCALE



JOE L. NASSIF
ALLEN & MILLS
HOWARD R. GARRISS
SCHOOL OF DESIGN NORTH CAROLINA STATE COLLEGE

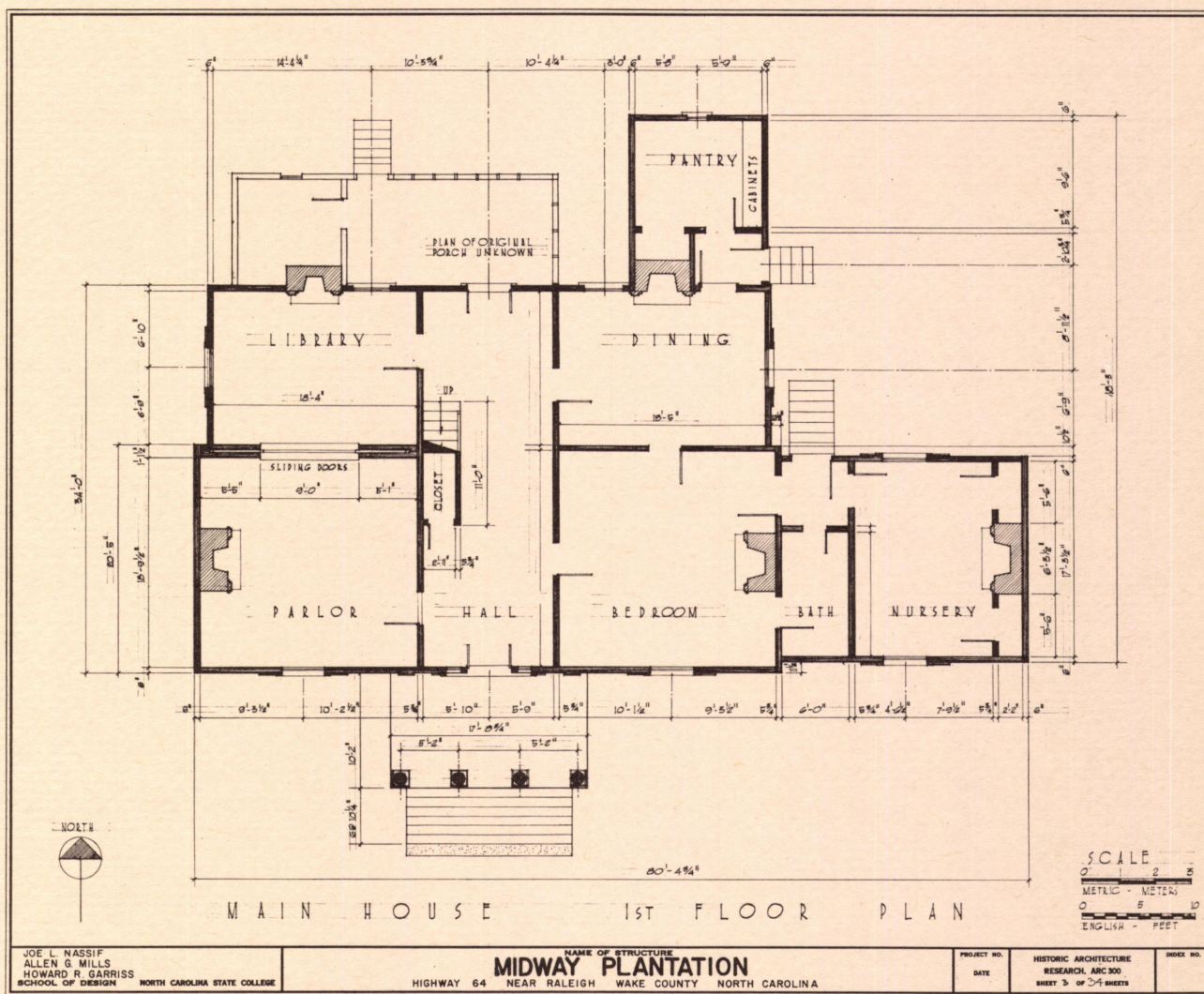
MIDWAY PLANTATION

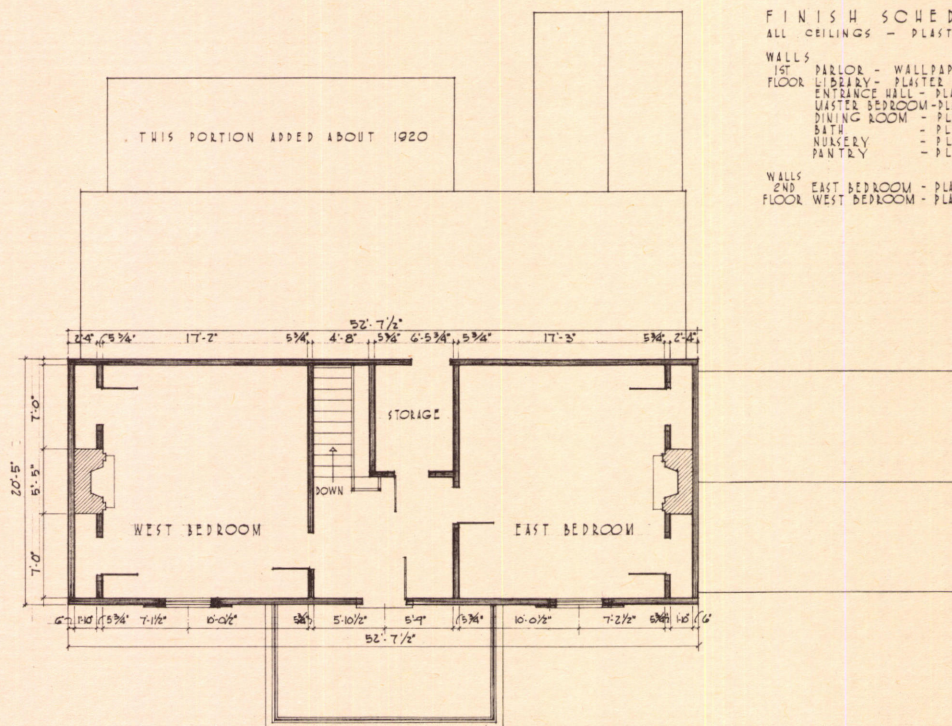
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FINISH SCHEDULE

ALL CEILINGS - PLASTER

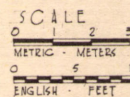
WALLS

1ST FLOOR PARLOR - WALLPAPER, ORIGINAL EXISTS
 LIBRARY - PLASTER
 ENTRANCE HALL - PLASTER
 MASTER BEDROOM - PLASTER
 DINING ROOM - PLASTER
 BATH - PLASTER
 NURSERY - PLASTER
 PANTRY - PLASTER

WALLS

2ND FLOOR EAST BEDROOM - PLASTER
 WEST BEDROOM - PLASTER

SECOND STORY PLAN



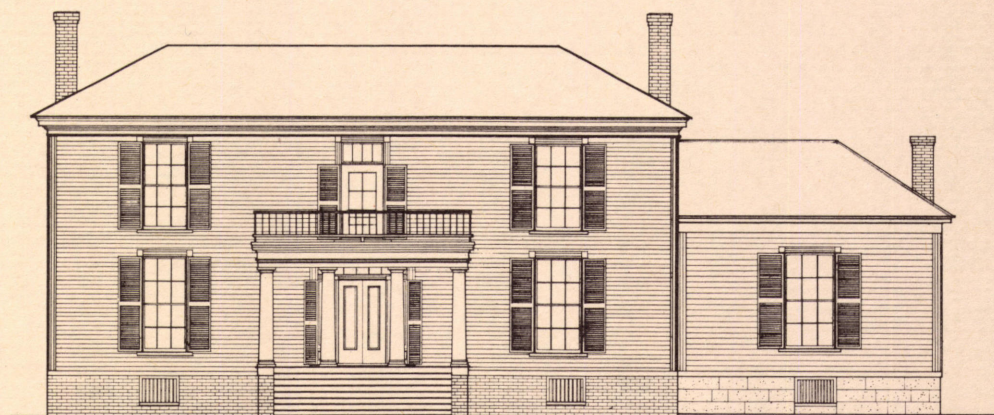
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 ALLEN & MILLS
 HOWARD R. GARRISS
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 ENGLISH - FEET

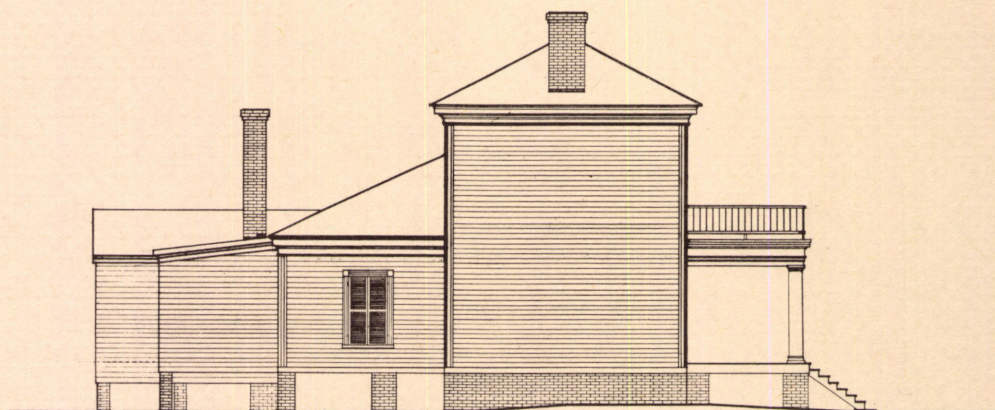
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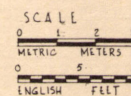
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WEST ELEVATION



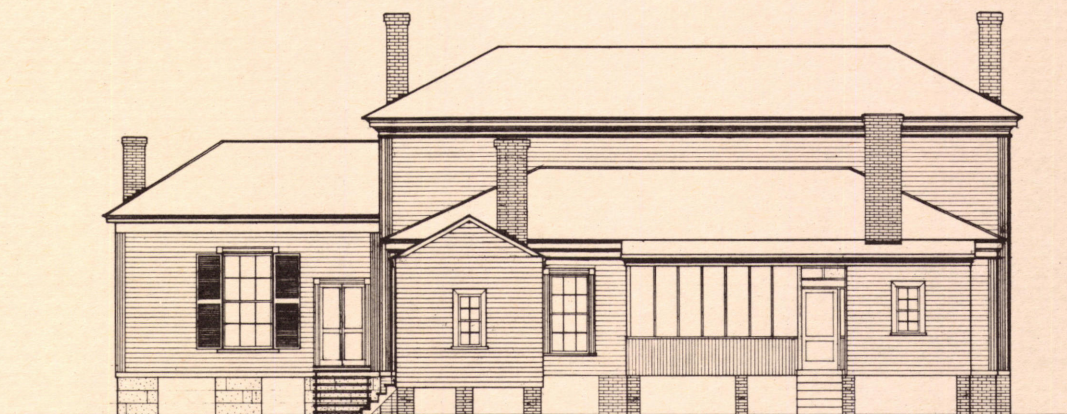
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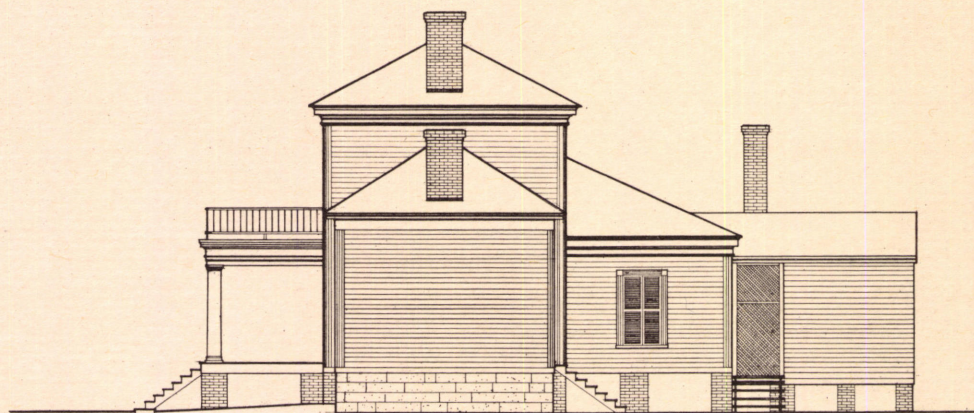
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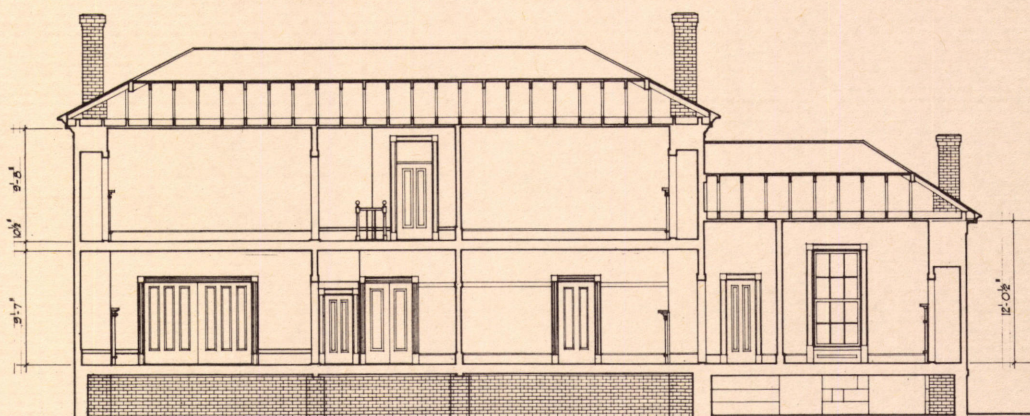
EAST ELEVATION

SCALE
 0 1 2 3
 METRIC METERS
 0 5 10
 ENGLISH FEET

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LONGITUDINAL SECTION

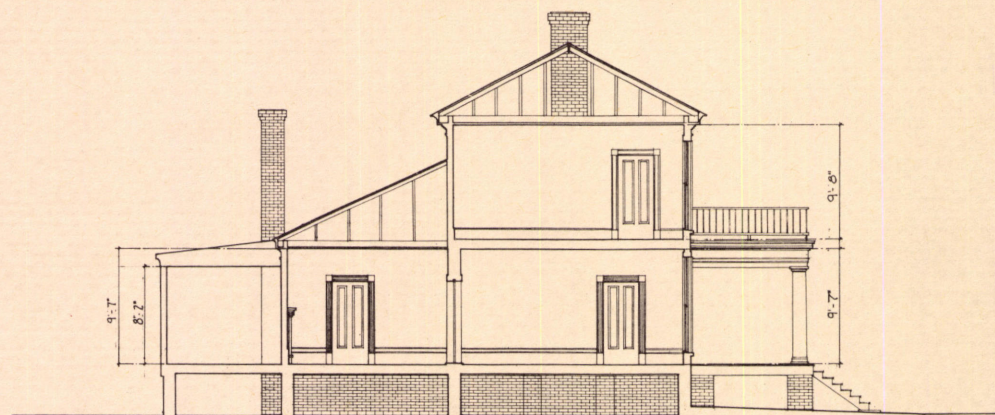
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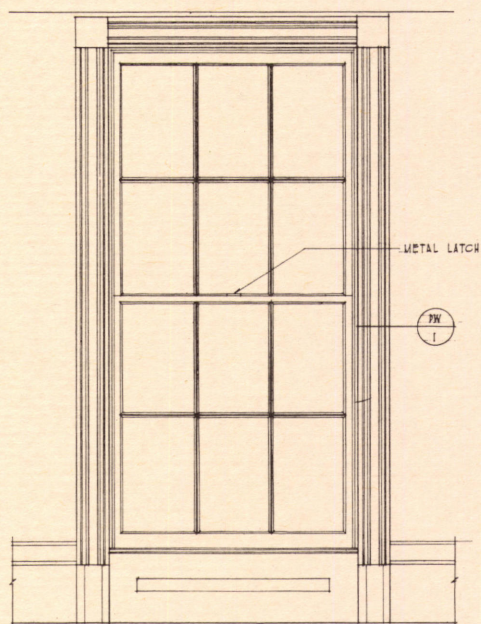
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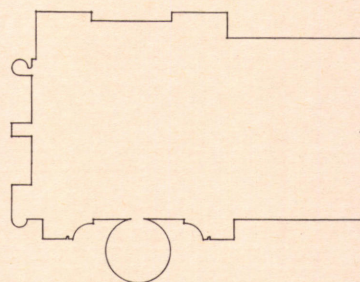
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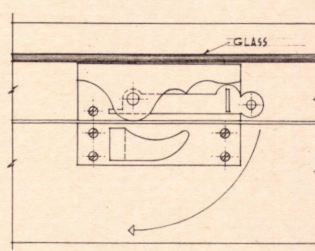
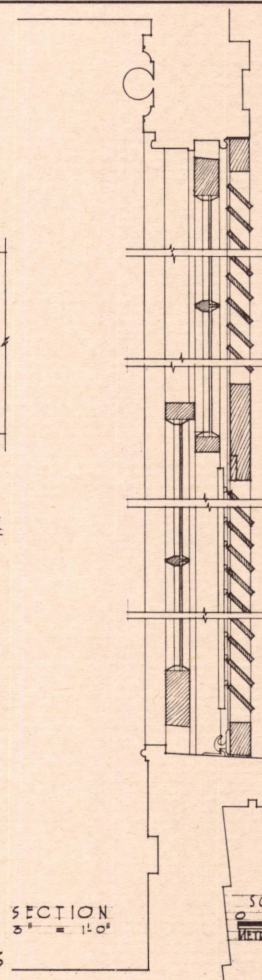
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INTERIOR ELEVATION



PW 1/2 FULL SIZE JAMB PROFILE

METAL LATCH DETAIL
FULL SIZESECTION
3/8" = 1'-0"

SCALE
0 5
METRIC - METERS
0 5
ENGLISH - FEET

DETAILS OF PARLOR WINDOW - TYPICAL FOR FRONT WINDOWS

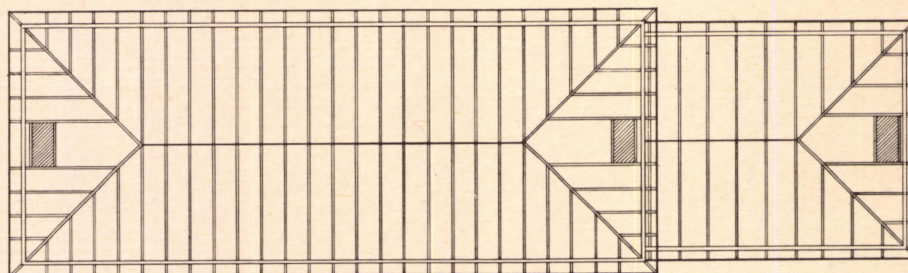
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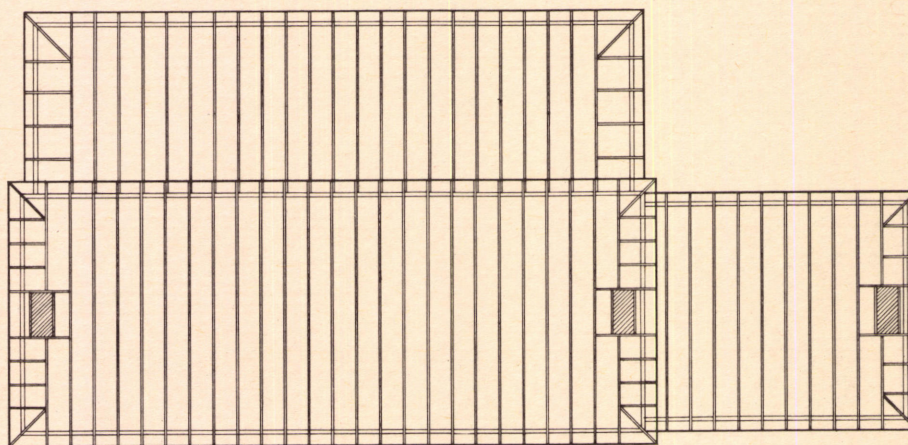
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RAFTER FRAMING PLAN



JOIST FRAMING PLAN

SCALE
 0 1 2 3
 METRIC - METERS
 0 5 10
 ENGLISH - FEET

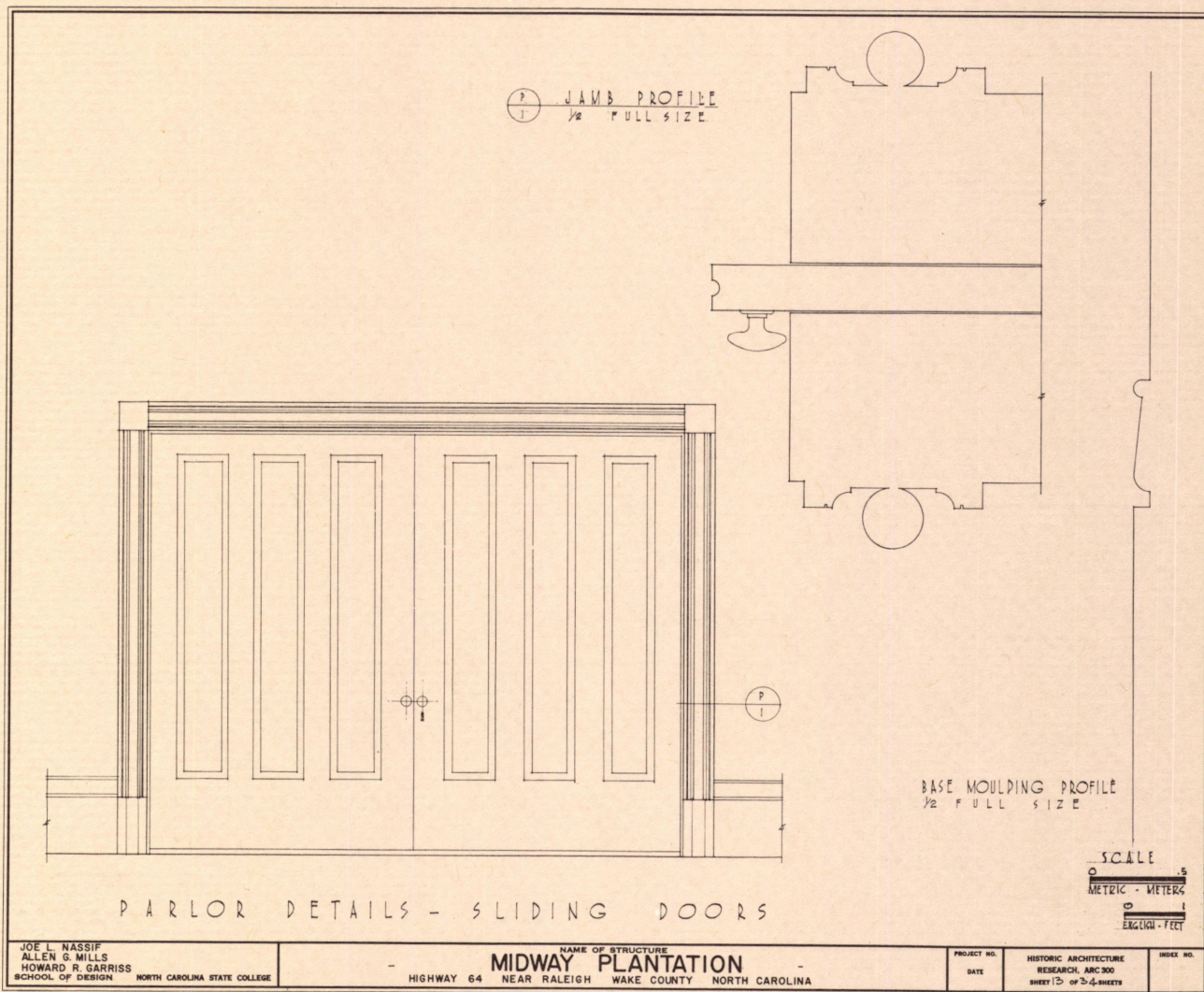
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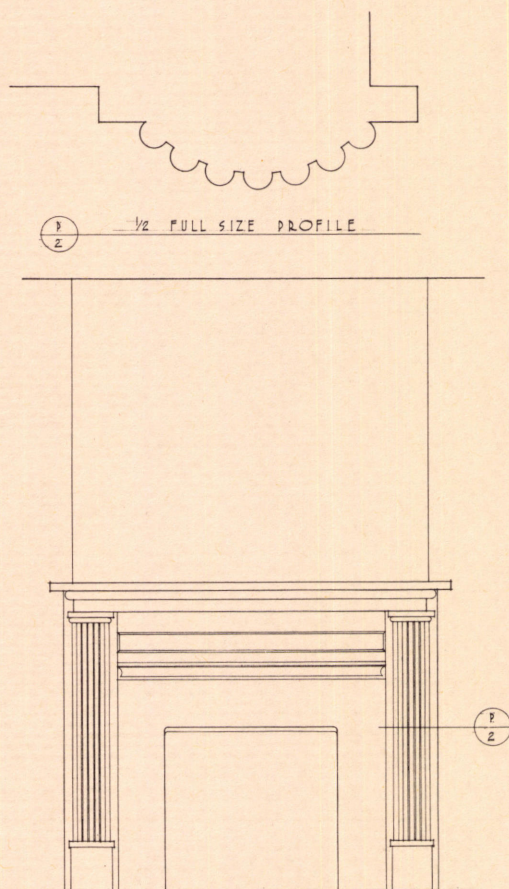
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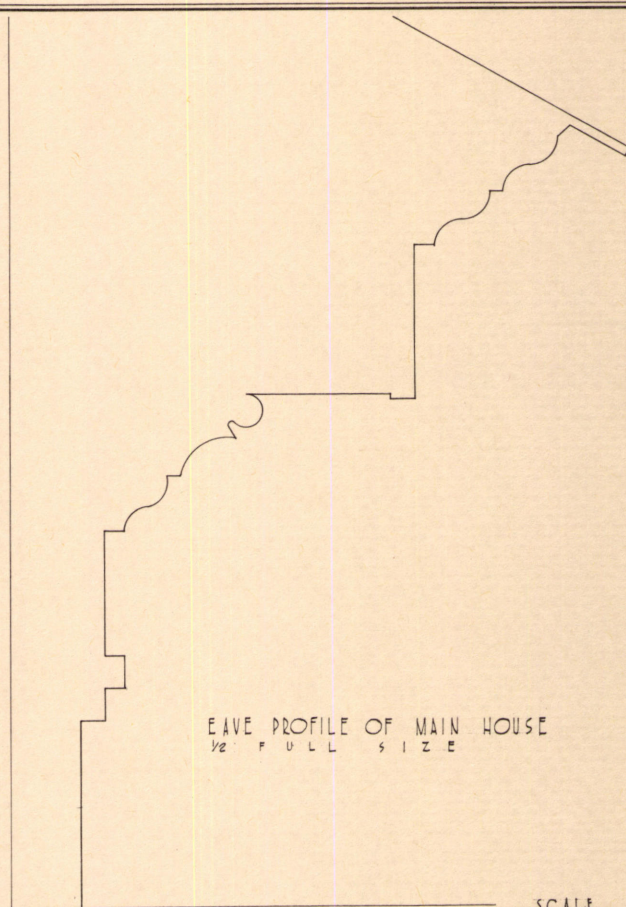
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DETAILS OF PARLOR FIREPLACE

EAVE PROFILE OF MAIN HOUSE
1/2 FULL SIZE

SCALE
0 5
METRIC - METERS
0 1
ENGLISH - FEET

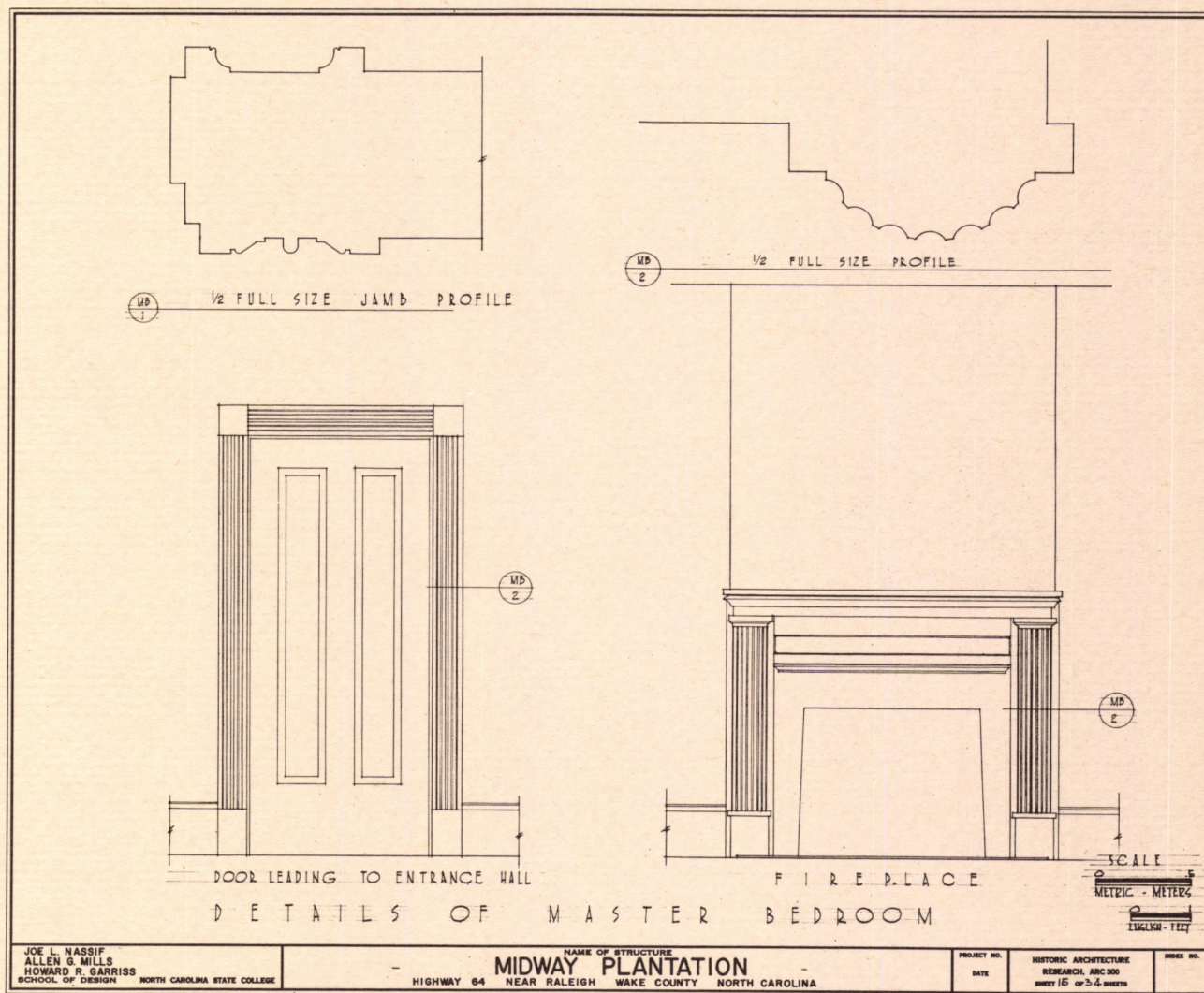
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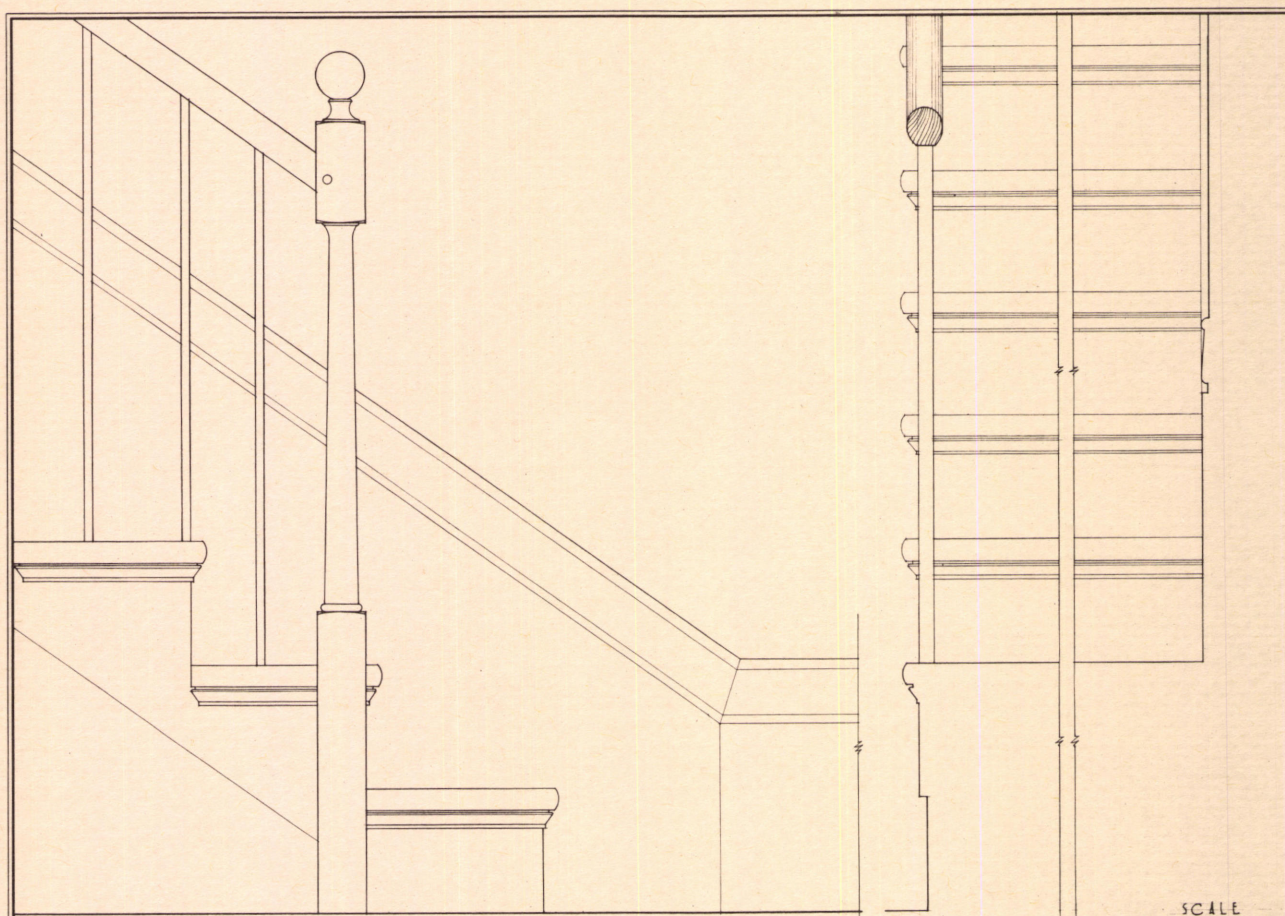
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DETAILS OF ENTRANCE HALL STAIRS

SCALE
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 METRIC - METERS
 0 1
 ENGLISH - FEET

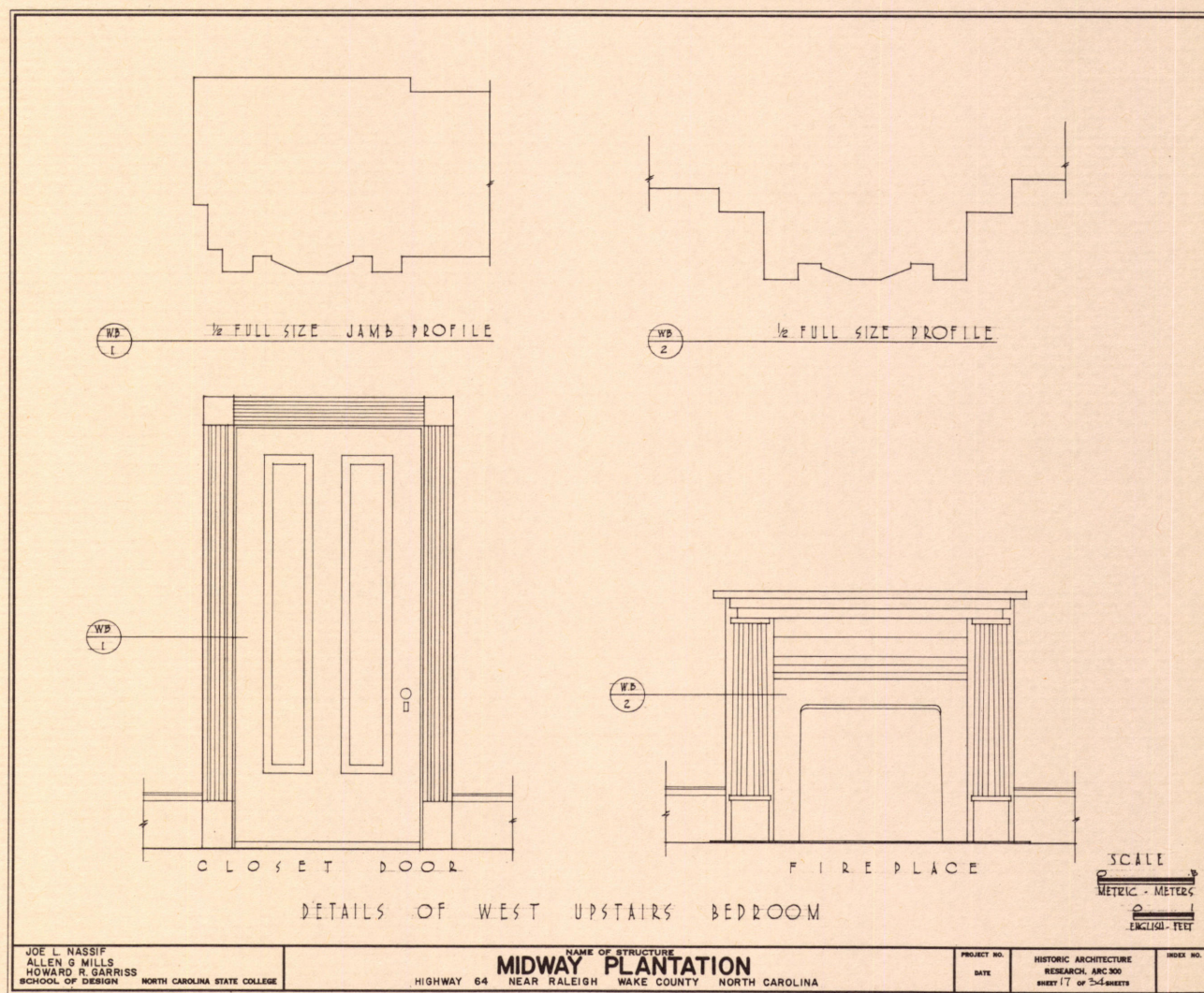
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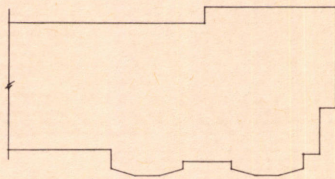
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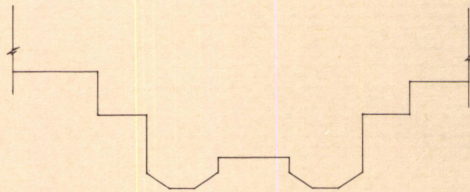
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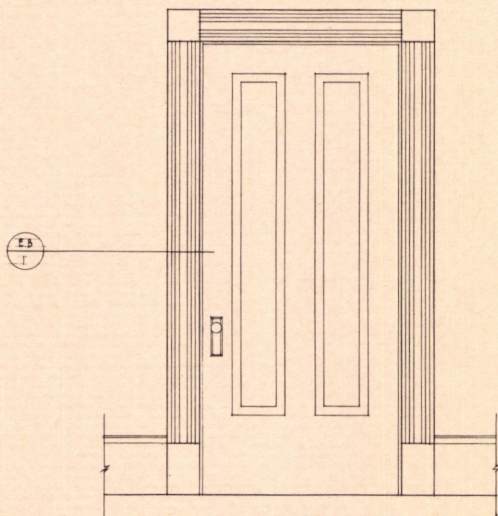




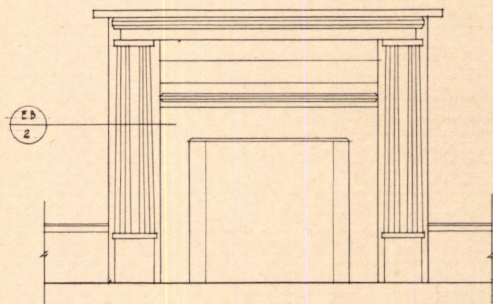
1/2 FULL SIZE JAMB PROFILE



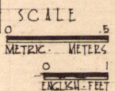
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CLOSET DOOR



FIREPLACE



DETAILS OF EAST UPSTAIRS BEDROOM

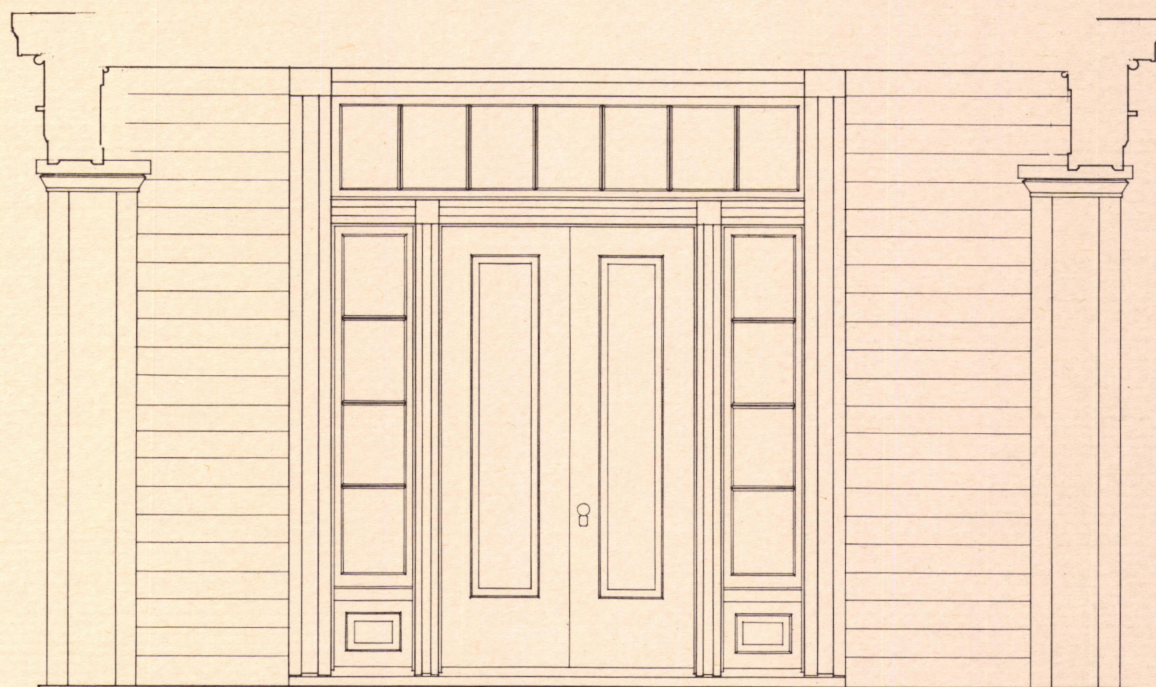
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DETAIL OF FRONT DOOR - SECTION THRU PORTICO

SCALE
 0 1 2
 METRIC - METERS
 0 1 2
 ENGLISH - FEET

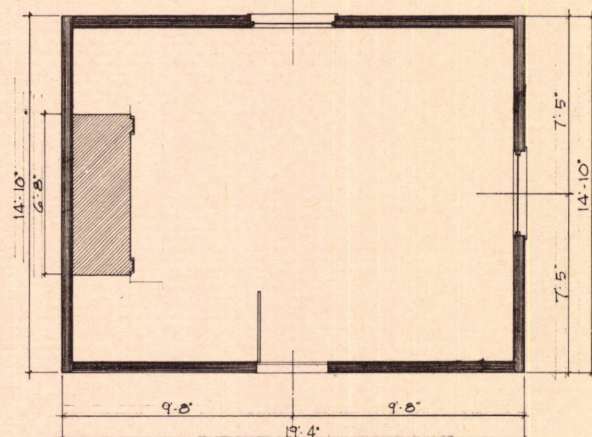
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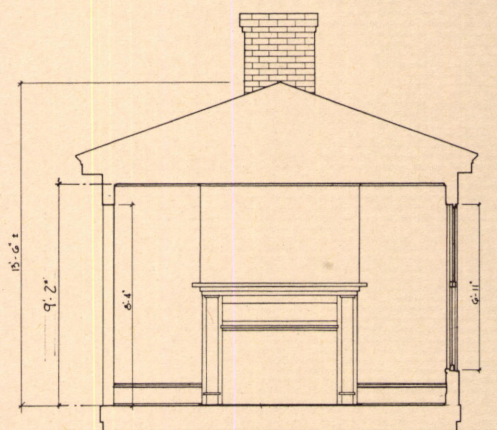
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PLAN



NORTH-SOUTH SECTION



SCHOOL HOUSE

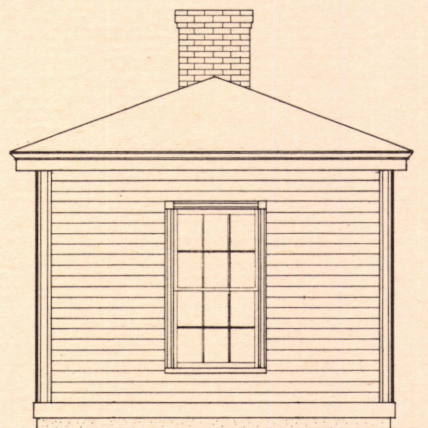
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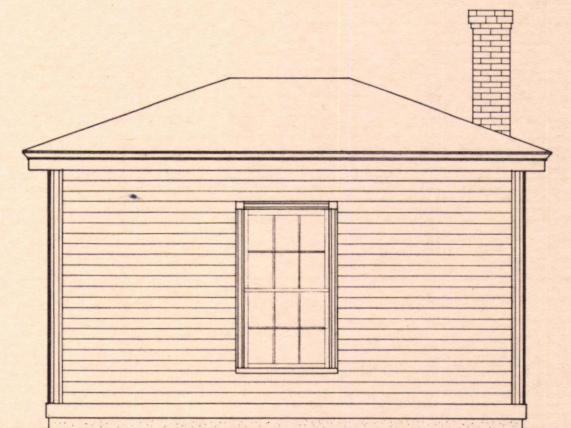
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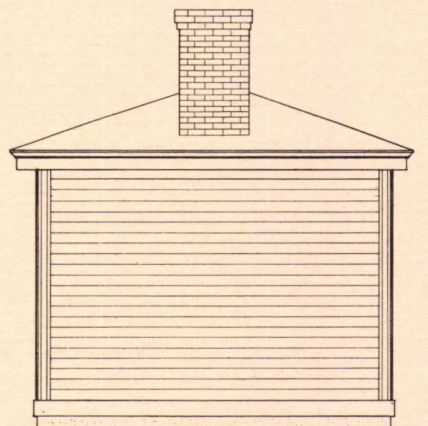
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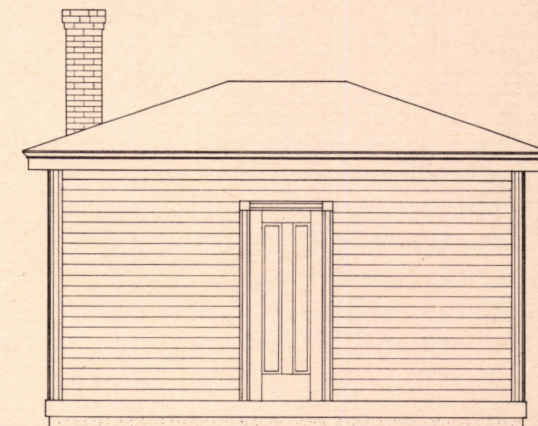
E A S T E L E V A T I O N



N O R T H E L E V A T I O N



W E S T E L E V A T I O N



S C H O O L H O U S E S O U T H E L E V A T I O N

SCALE
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 METRIC - METERS
 0 1 2 3
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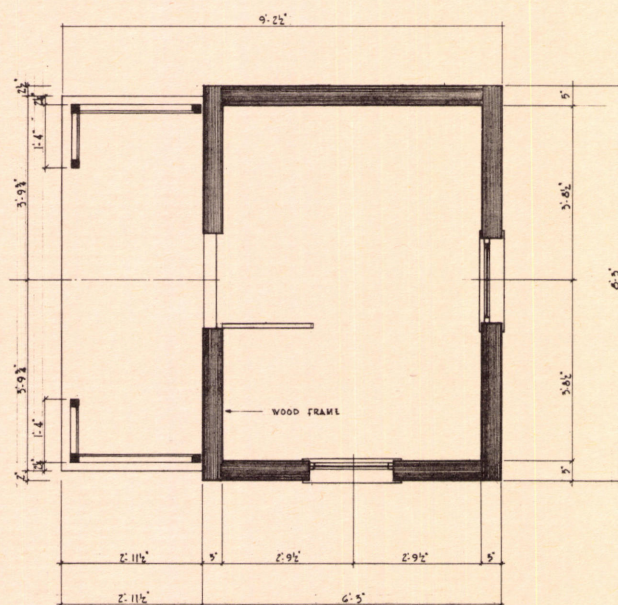
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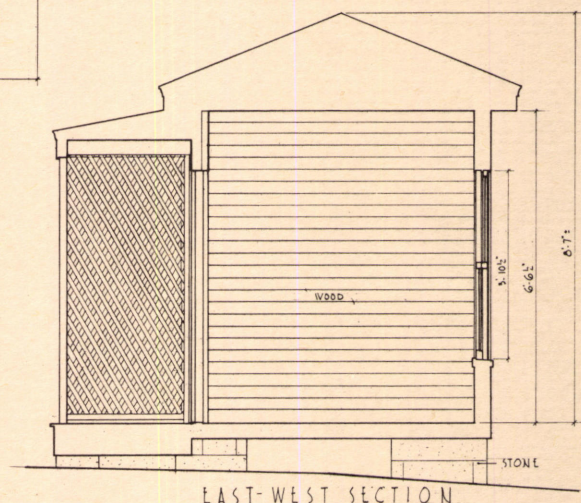
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PLAN



EAST-WEST SECTION

DOLL HOUSE

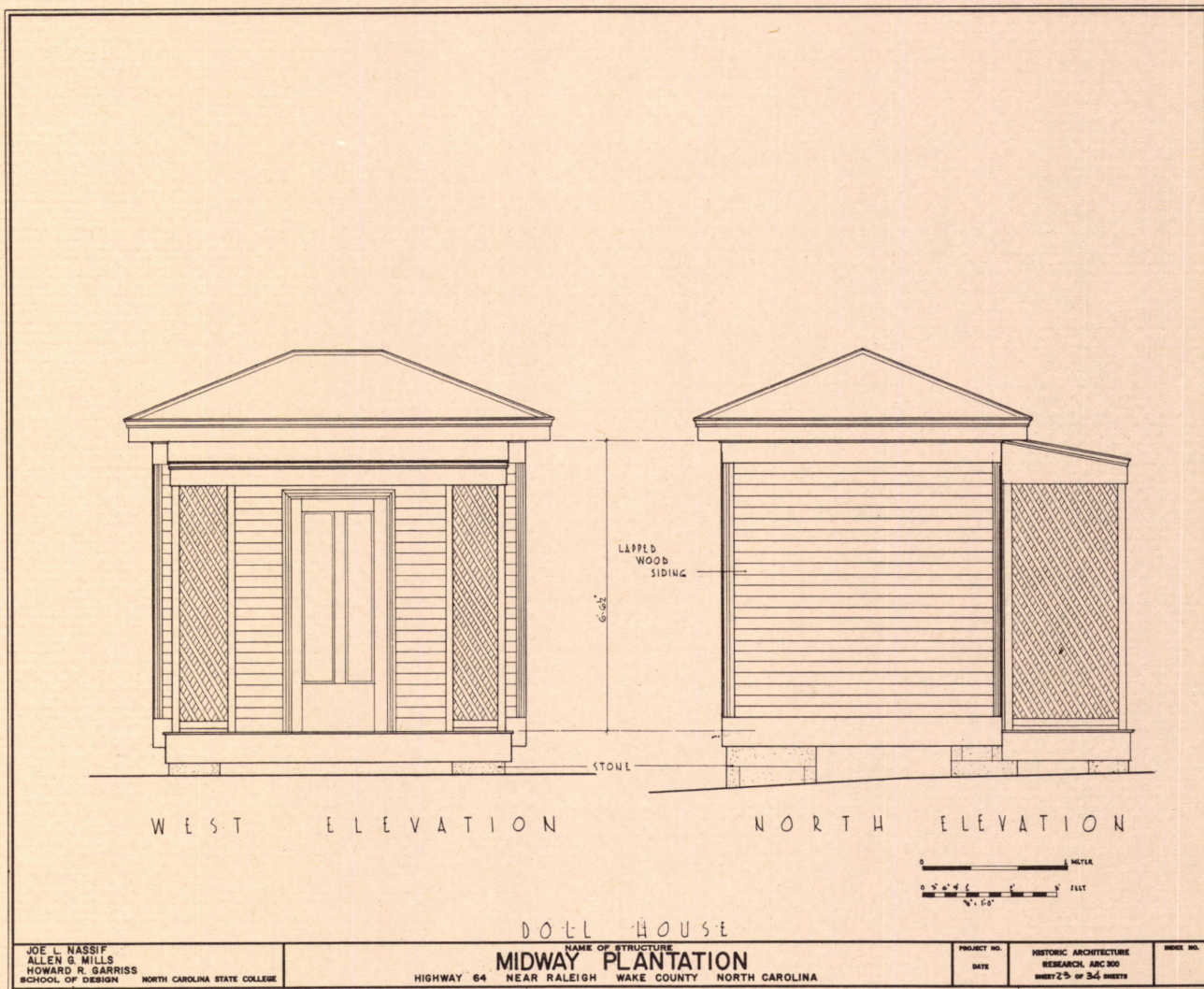
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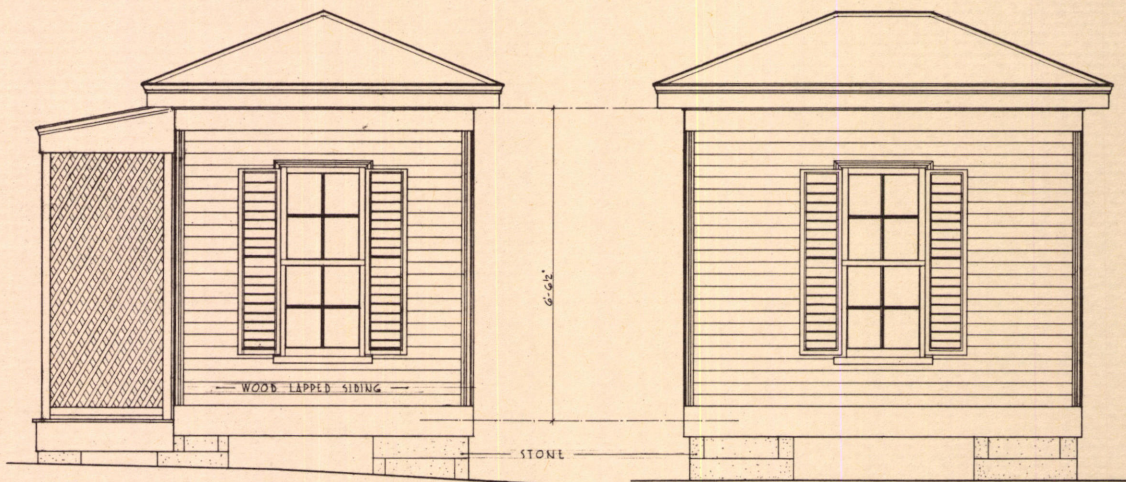
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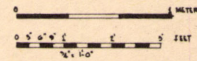
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SOUTH ELEVATION

WEST ELEVATION



DOELL HOUSE

NAME OF STRUCTURE
MIDWAY PLANTATION

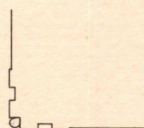
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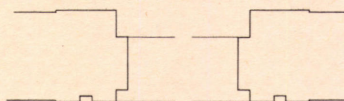
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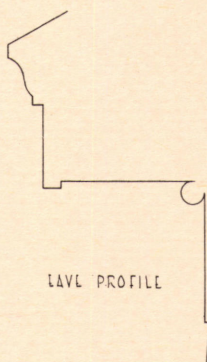
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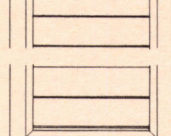
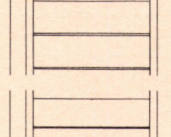
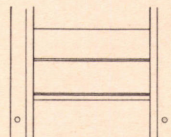
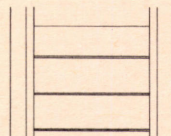
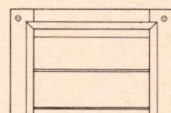
HOR. SEC. THRU CORNER



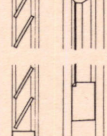
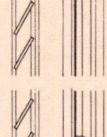
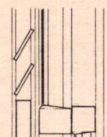
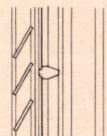
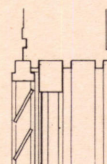
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ELEV. PROFILE

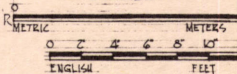


SHUTTER



WINDOW-SHUTTER

SCALE



DOLL HOUSE

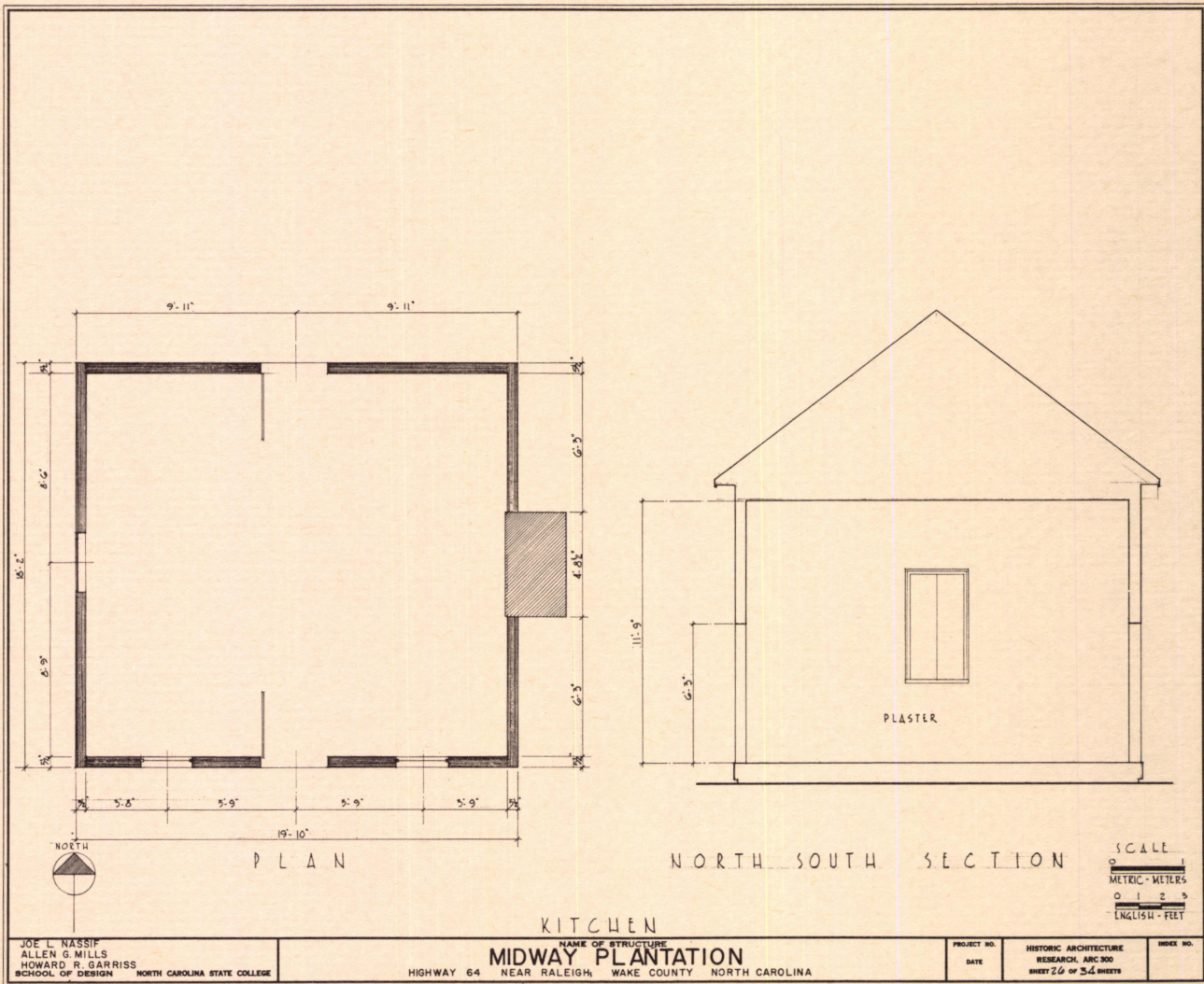
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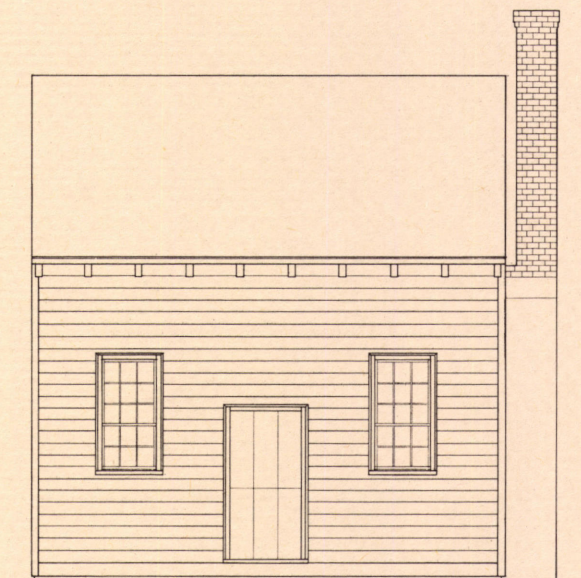
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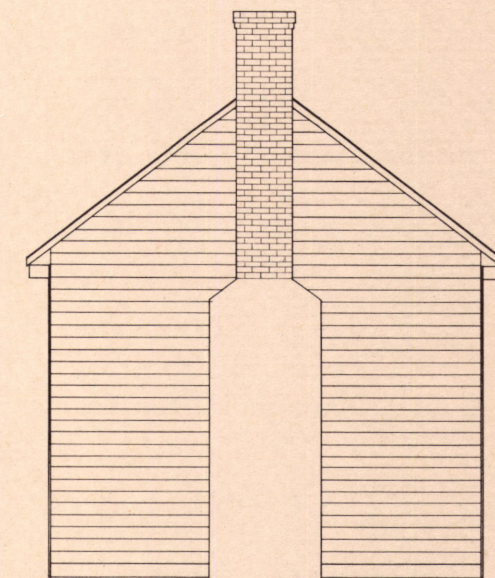
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EAST ELEVATION

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 METRIC METERS
 0 1 2
 ENGLISH FEET

KITCHEN

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MIDWAY PLANTATION

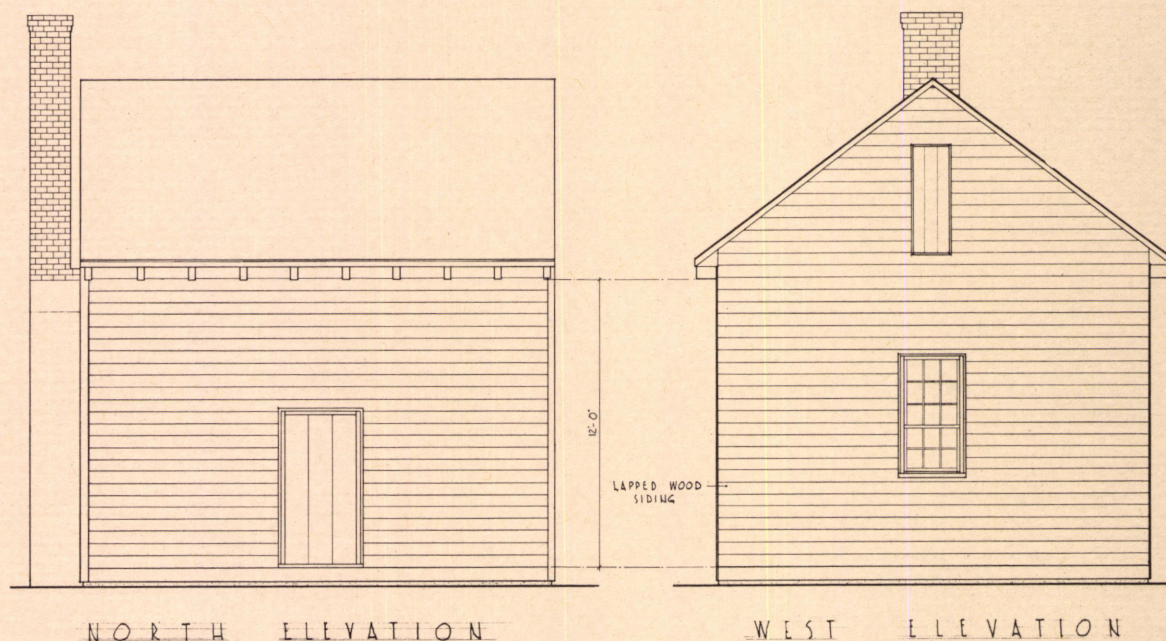
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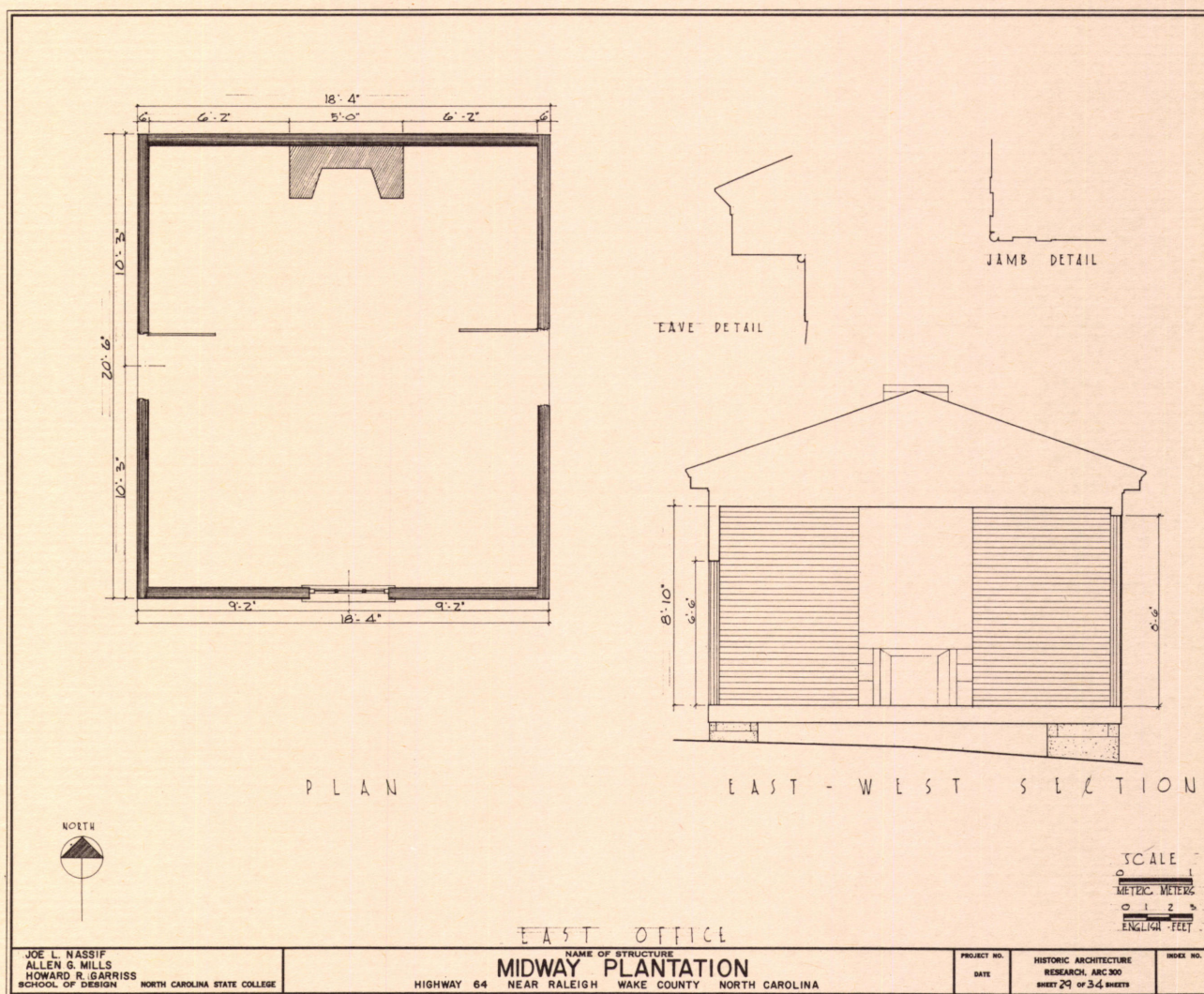
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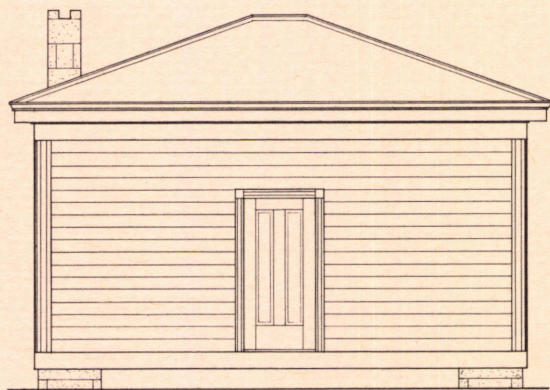
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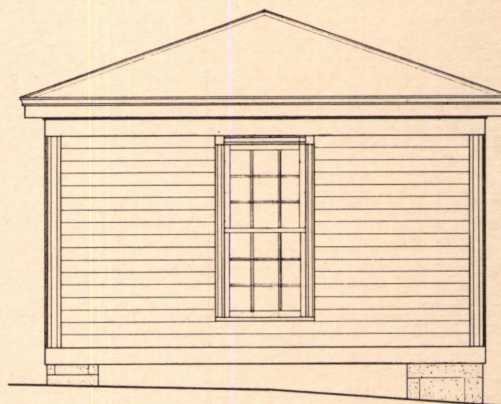
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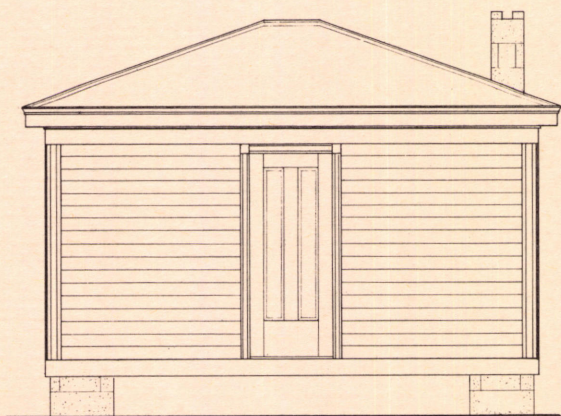




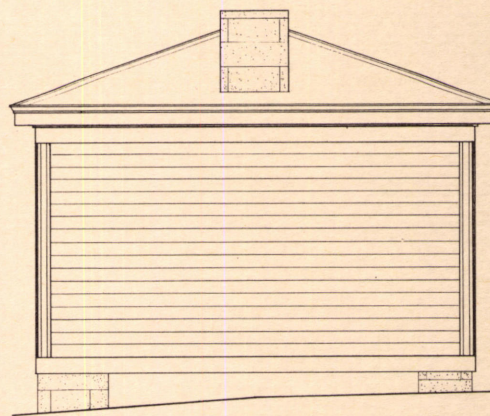
WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



NORTH ELEVATION



EAST OFFICE

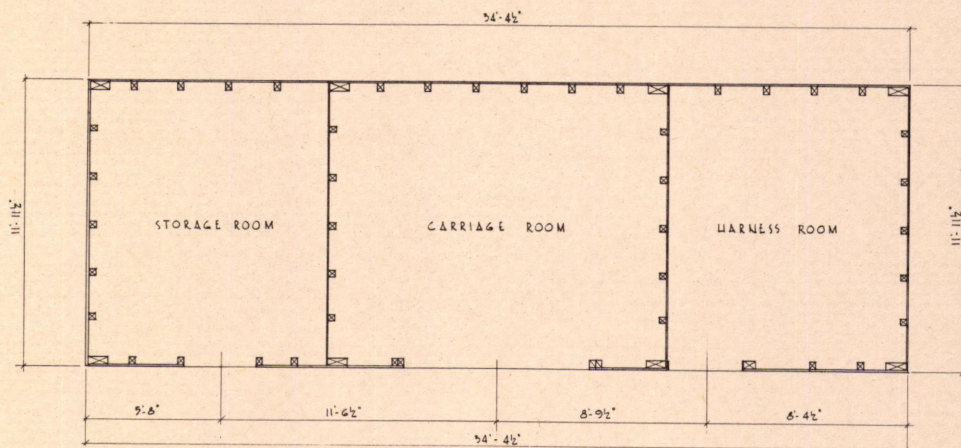
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P L A N



SCALE
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 METRIC - METERS
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 ENGLISH - FEET

CARRIAGE HOUSE

NAME OF STRUCTURE
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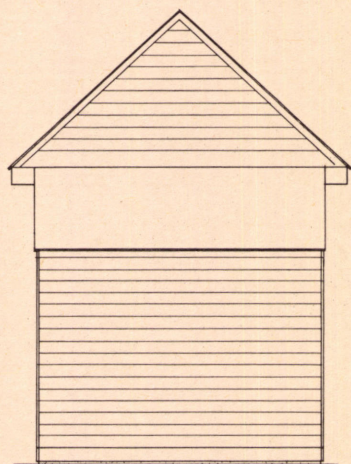
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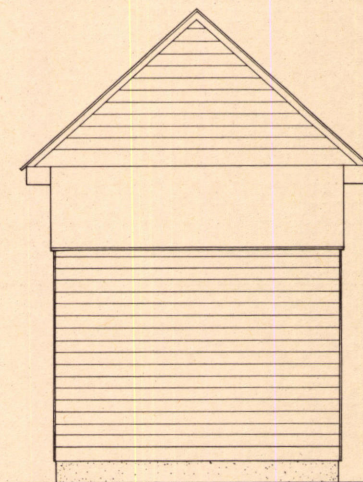
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EAST ELEVATION



WEST ELEVATION

CARRIAGE HOUSE

SCALE
 0 1
 METERS
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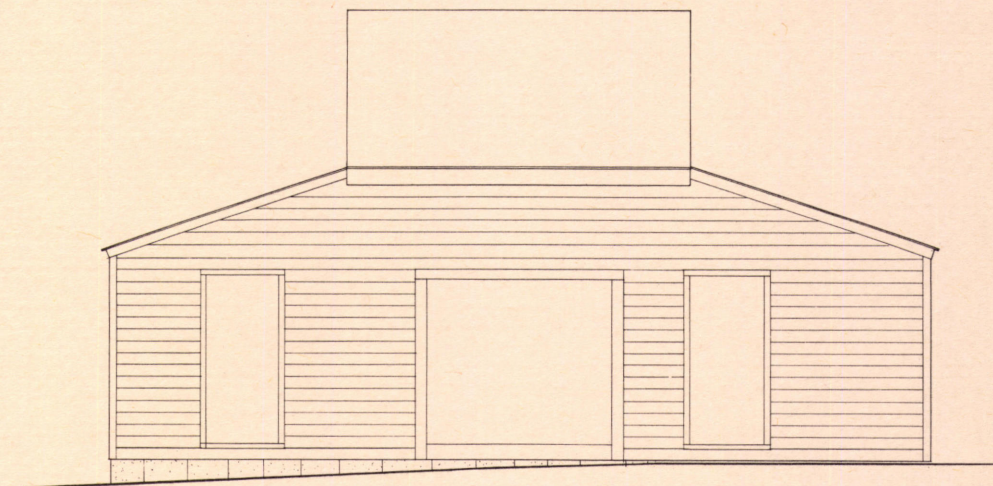
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SOUTH ELEVATION

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 METRIC-METERS
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 ENGLISH-Feet

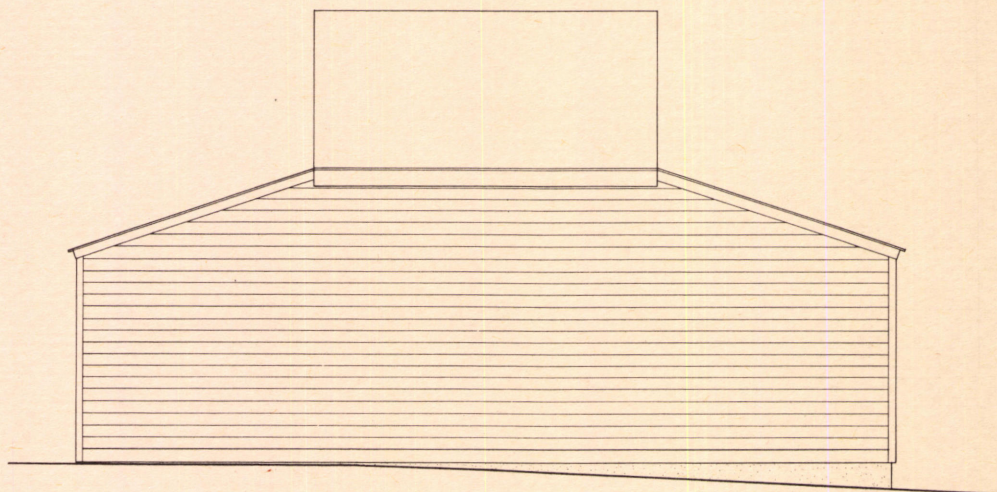
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ACKNOWLEDGEMENTS

For his time, interest, and assistance: RUSSELL DURNING, Department of English, University of North Carolina at Chapel Hill.

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For their special interest we would like to express our appreciation to:
WALLACE K. HARRISON, and EDGAR J. KAUFMANN, JR.

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