

Teeter-Totter Principles

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Teeter

Totter

Principles



Autonomous Artisans'
Housing project
Staten Island
1981-1984



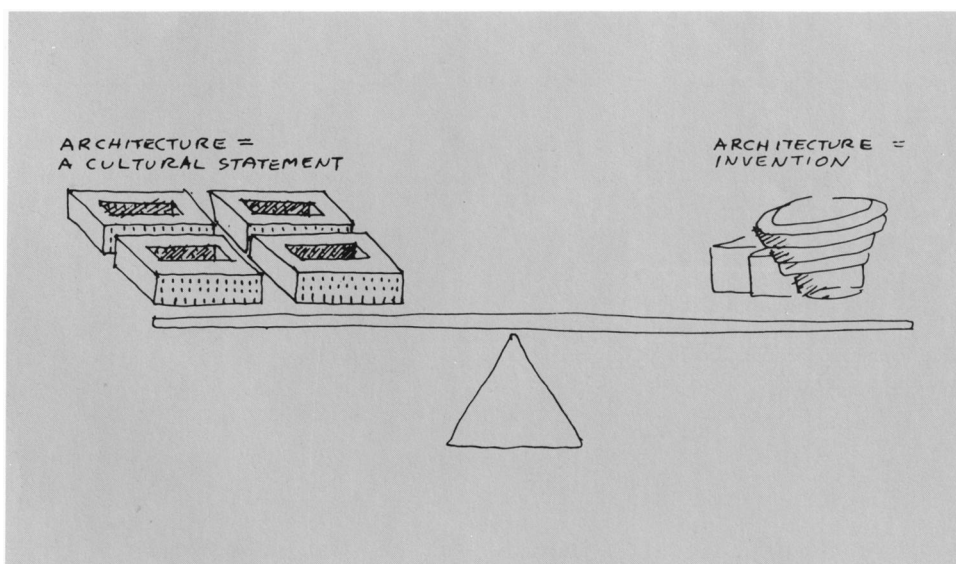
Vernacular architecture

The architecture of a particular culture depends on the dialectic between historical and contemporary forces—between architecture as statement of existing culture and architecture as inventive art.

Between an architecture of recurring cultural models and architecture as the spontaneous result of poesis lies an architecture that is neither antimodern nor antihistorical. This argument is for synthesizing oppositions, not weakening otherwise extreme positions; the aim is a synthesis that intensifies instead of a blend that compromises. A teeter-totter diagram illustrates the discussion: architecture as a cultural statement at one end is balanced by architecture as invention at the other; at the fulcrum are principles around which the ends pivot.

Research in vernacular here excludes monumental architecture, public building types, and technologically specialized constructions; it excludes the majority of examples from which academic texts derive the «basics» of architecture. Vernacular architecture develops from the characteristics of a place rather than from the imposition of external meanings. It exhibits fundamental and unchanging properties: the laws of gravity, the properties of materials, the interlocking plan-section aspects of recurring building types, and the physical link between earth and sky, all of which are essential elements of architecture.

It is the vernacular which most clearly expresses the unique in a culture. Architecture indigenous to a particular landscape stands as counterpoint to academic historical models. Vernacular models—which historians have called the «lower» forms of architecture—are deeply rooted in their sites, cultural backgrounds, and materials. Academic models—the «higher» forms of history—have been applied cross-culturally in many places, with the result that meanings are displaced both from the local culture and from the culture of the model's origin. Transplanted high models fail to evoke the history of the new site, landscape, or culture. Their most meaningful existence is in a detached historical framework. Nor do subsequent imitations improve or develop a form; what is built instead are caricatures. With a culturally specific vernacular model as a point of departure, a reinterpretation or transformation of the original in a refined version can avoid caricature to become a positive recreation.

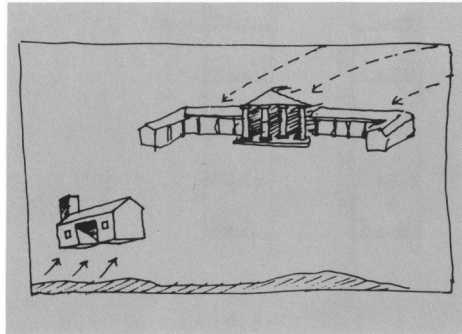


At least four vernacular traditions prevail in North American architecture:

- 1 urban vernacular—the contiguous recurring building types of urban fabrics;
- 2 rural vernacular—the indigenous architecture of the carpenter-architect;
- 3 commercial strip vernacular;
- 4 suburban housing and speculative office vernacular.

One aim here is to analyze anonymous vernacular architecture to find cultural models that clarify what is urban and what is rural. The arguments in favor of this clarification are many, ranging from preservation of natural landscape and animal life to concentration of human settlements for enriched social interaction. This investigation concentrates on the first two vernacular traditions. Models have not been sought in the vernacular of the commercial strip or suburb because their multiplication further weakens, rather than refines, urban and rural distinctions.

There are also subjective reasons for concentrating on the clearly urban and purely rural. For example, the poetic intensity of Edward Hopper's painted views—the clapboard-covered cube of a solitary house by the sea or the geometric block of a farmhouse sitting in golden ripples of long grass—captures the silent quality of American rural form. Hopper also selected subjects from purely urban form, with sun streaming onto aligned blocks of buildings, each with a chisel stair and a chimney box casting long shadows on the roof. Sublimity of architectural form often depends on its relation to surrounding landscape or urban geometry.



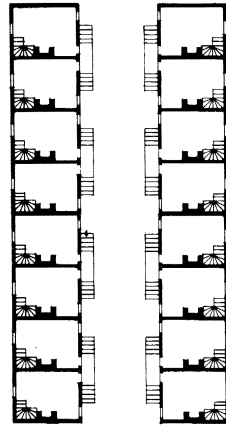
«Route 6 Eastham»
Edward Hopper
1941



«Sunday Morning»
Edward Hopper
1930

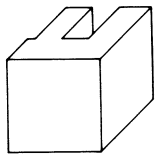
Urban vernacular

The contiguous buildings in the gridded city plans of the first half of the twentieth century exhibit certain positive characteristics that may serve to direct the reassessment of today's urban building patterns. A kind of urban vocabulary, these structures were built according to plan-section patterns that were repeated in many different cities. As a result nearly every gridded city in North America has U, E, L, or H type structures. The individual buildings form a fabric that is sustained and completed by the lines of adjacent buildings. Continuous patterns make blocks with clearly formed edges of public streets, avenues, and parks. Collective definition provided by private structures is often lost in modern detached constructions.

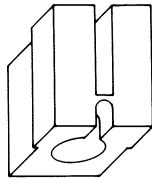


Contiguous walk-up
Philadelphia
ca. 1750

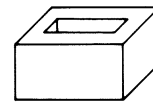
Three stages of evolution of these contiguous building types yielded three general categories: the contiguous walk-up types, plan-extrusion or letterlike types, and tower types. In the first group the lot size was the predominant influence. In the second group light and air and the shape of the plan were determinant. In the third category the dominating characteristics are sectional, determined by increased height. These widely varying types often coexist on a single urban block; order is maintained by the continuous wall of the street. Definition of public and private space is achieved together with variations in individual buildings.



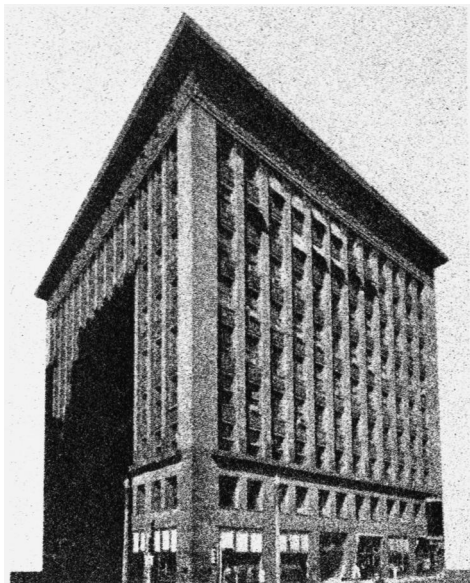
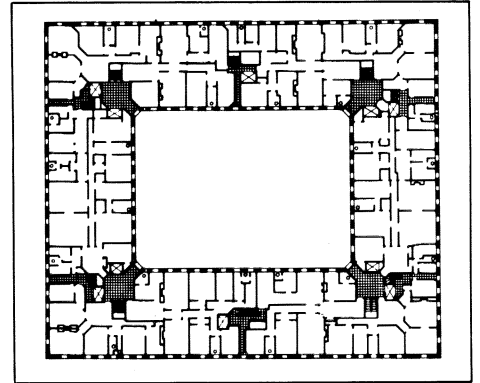
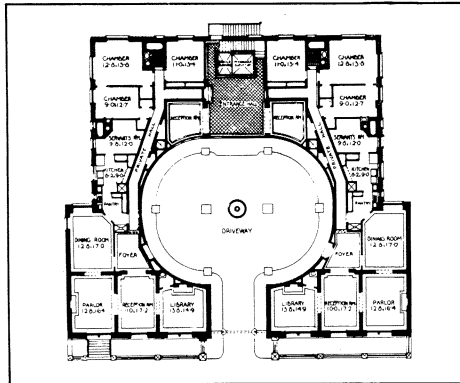
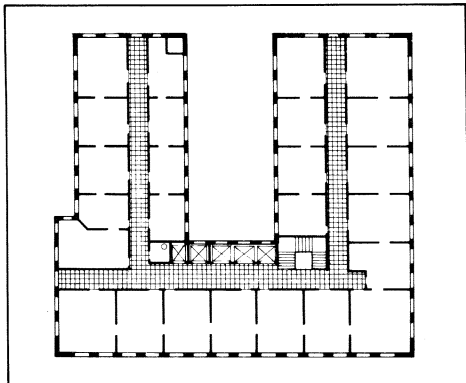
Wainwright
Building
Chicago
Adler and Sullivan
1891

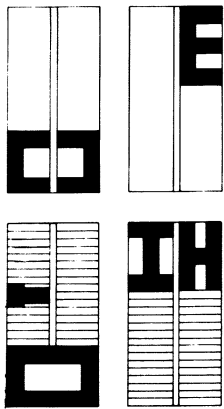


Lasanno Court
New York City
Schwartz and Gross
1907

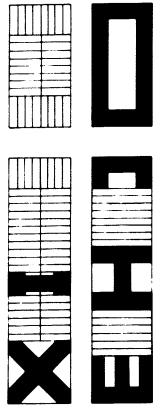


The Apthorp
New York City
Clinton and Russell
1908

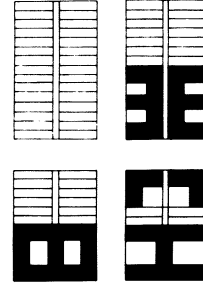




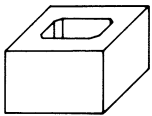
Typical block size
Chicago
300' × 600'



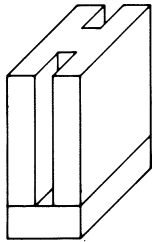
Typical block size
New York City
200' × 800'



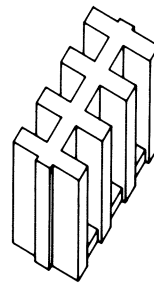
Typical block size
Seattle
200' × 360'



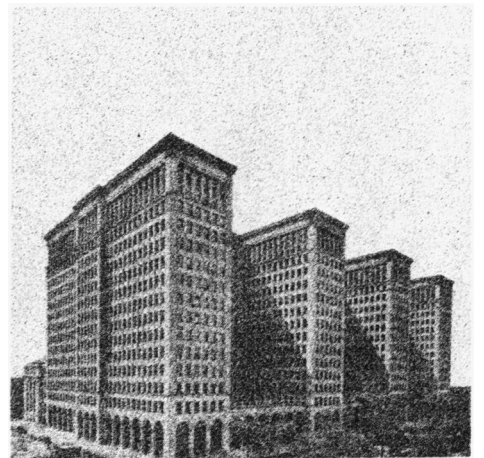
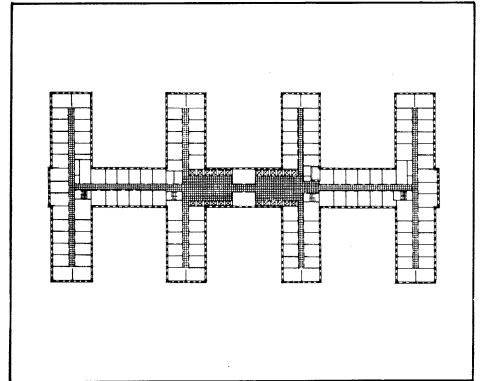
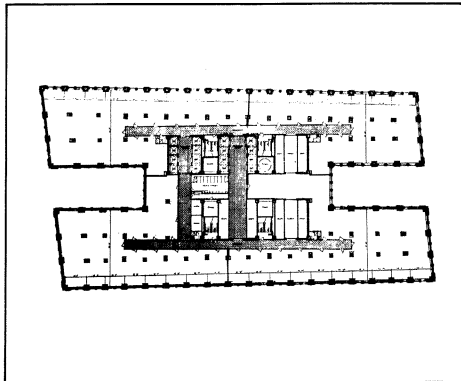
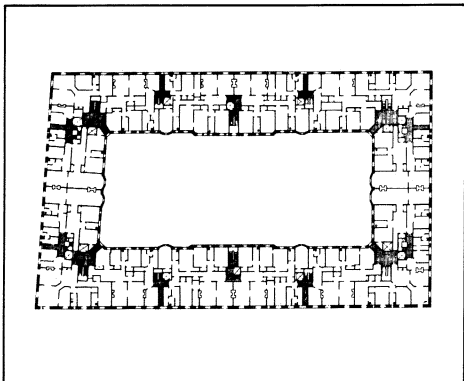
The Belnord
New York City
H. Hobart Weekes
1908



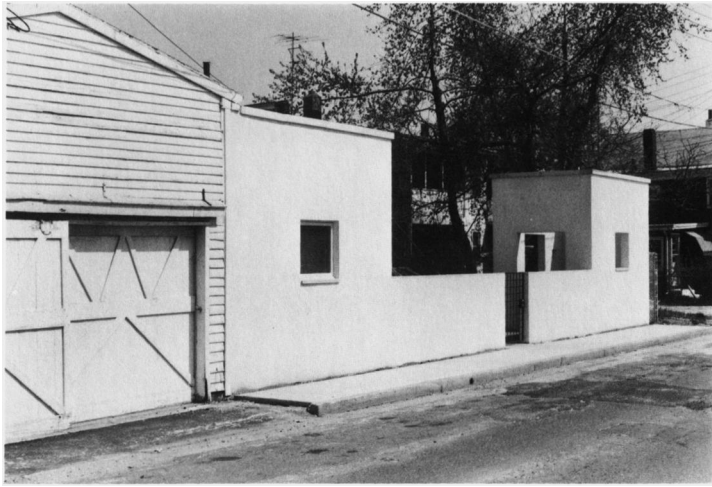
Equitable Building
New York City
E R Graham
1915



General Motors
Building
Detroit
Albert Kahn
1921

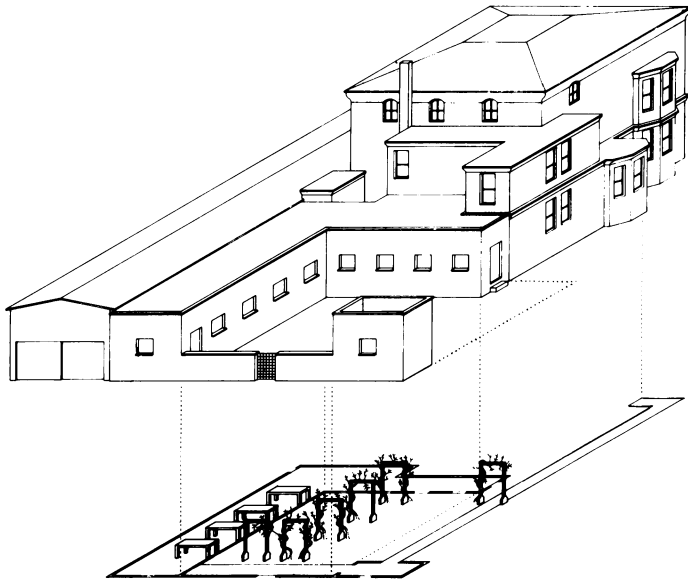


Steven Holl



Courtyard Addition
Millville
New Jersey
1978

In 1978, while we were researching urban vernacular building types for pamphlet catalogues, we had a small commission for an addition in Millville, New Jersey. An extension of graphic-art workspace on the rear of an existing nineteenth-century house used as offices, the new structure gave cause for organizing the rear—and sunny—side of the lot into a courtyard. This addition of a defined space appealed to the employees, who feared that the necessary rebuilding would destroy existing grapevines under which they take lunch in summer. Since the entrance to the building was to be restructured to the rear, the formal courtyard included an entrance-exit pavilion. Typologically the project hovers somewhere between an L and a U. Even in a tiny project, we hoped that architecture could be effective in establishing a microcosmic urban unit that both exalts and intensifies the existing greenery and reinforces the form of this small town.



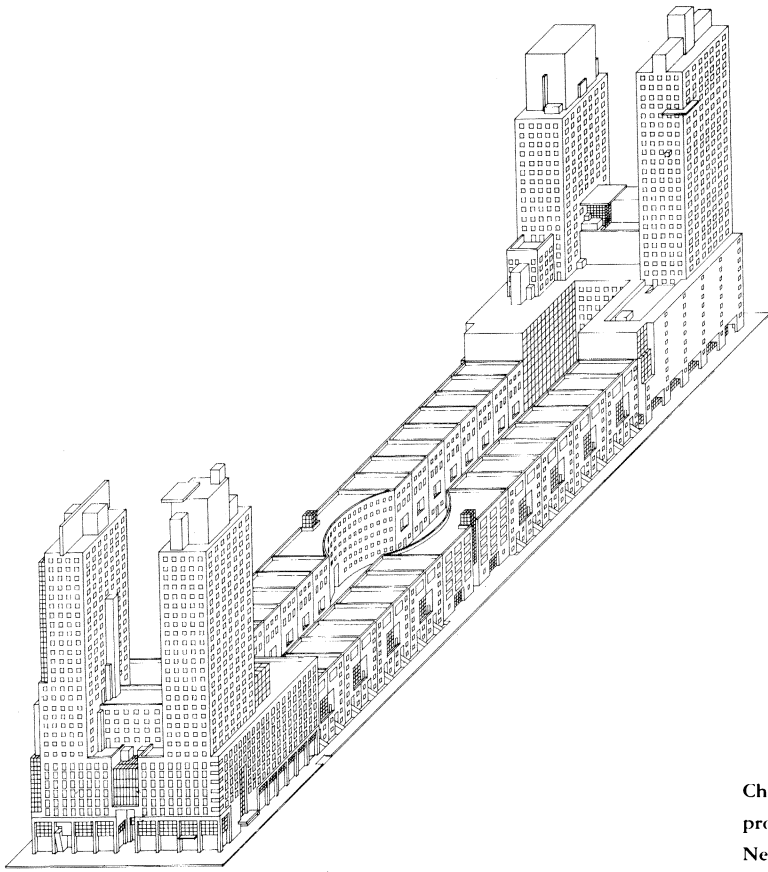
Courtyard Addition

Parallel to collecting and making drawings of the plans of twin-tower buildings along Central Park West in New York, we made a proposal in 1981 for a vacant block in the city's Chelsea area on Twenty-ninth Street and Tenth Avenue. The project for an ideal residential block in Manhattan is based on a central public space. The twin-tower type is recharged; it is doubled and aligned toward a public space at the interior of the urban block. A slot of sky between the towers is indicative of the block interior and throws a strip of sun down into it. From the interior public court the east-west view through the gardens is extended to the adjacent skyline through the void between the towers. At the center of the side streets, where the adjacent buildings are lowest, sunlight is maximized, while building development on the avenues is dense. The areas of the apartment floors in the row houses would be large enough to accommodate families.

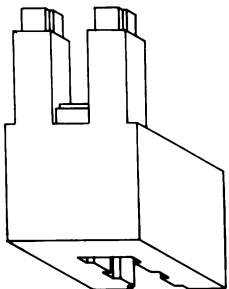
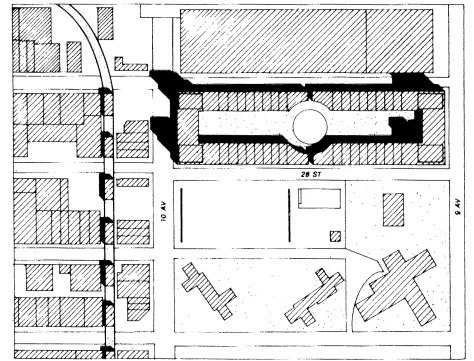
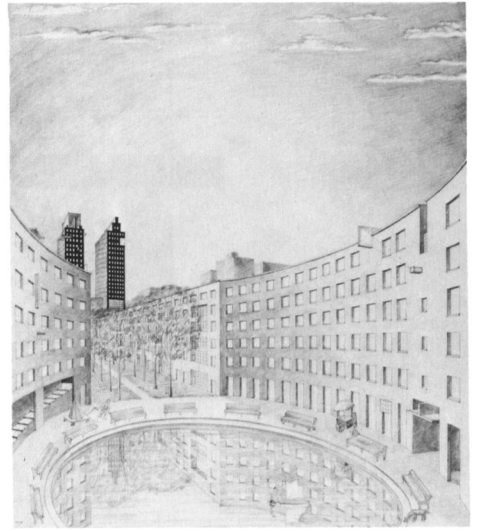


Courtyard Addition

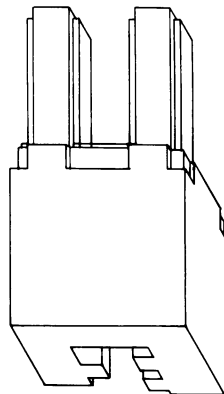
The project advocates the coexistence of several building types to form a block—row houses, twin-tower types, and a C type widened at the public open space. It advocates the collective assembly of individual buildings to define publicly-held exterior space on the street sides as well as in the block's interior.



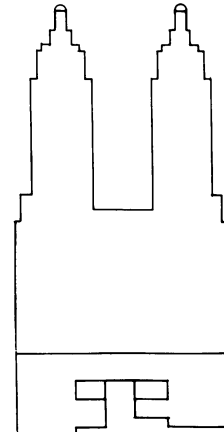
Chelsea Block project
New York City
1981



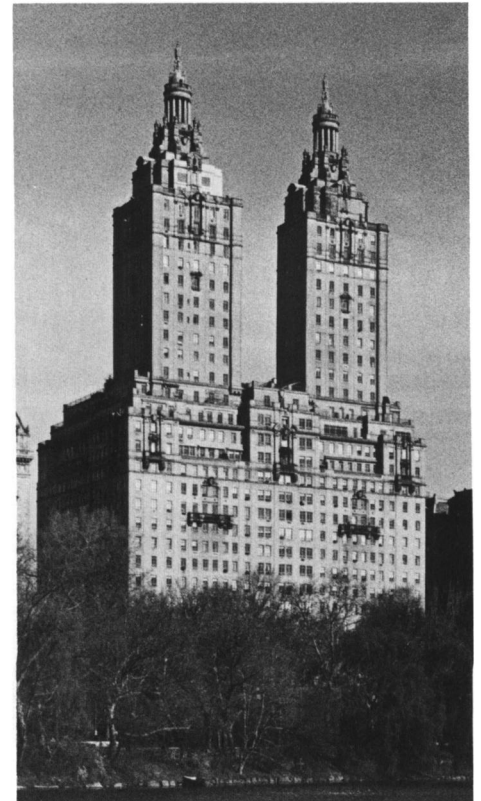
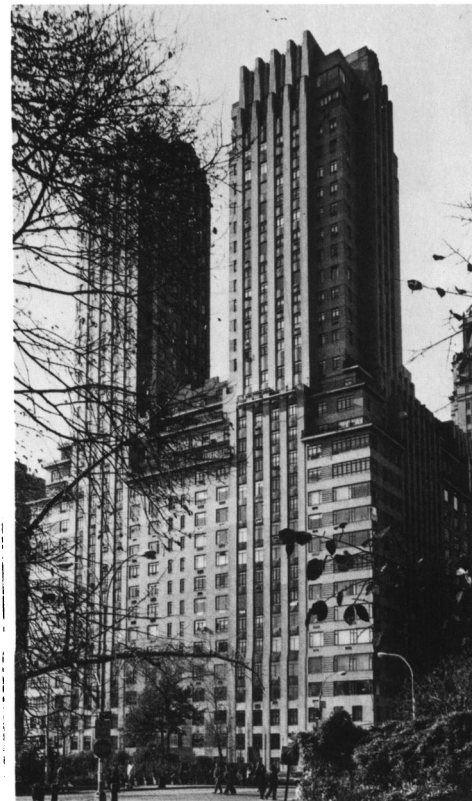
The Century
New York City
Irwin Chanin
1931



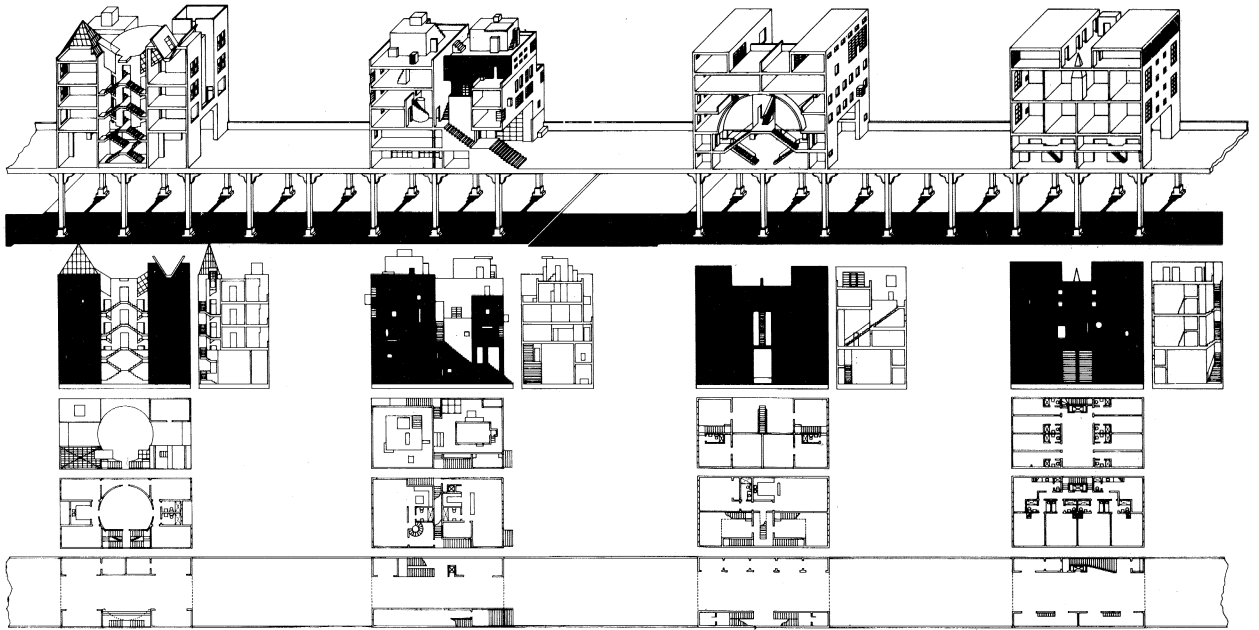
The Majestic
New York City
Irwin Chanin
1930



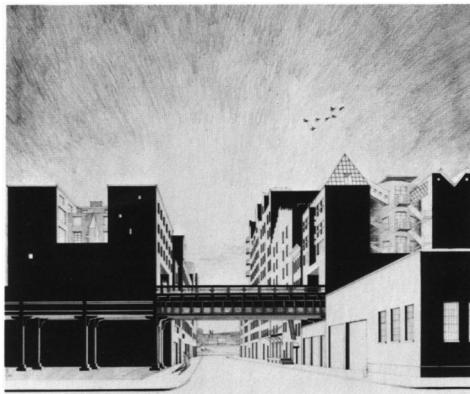
The San Remo
New York City
Emery Roth
1930



Bridge of Houses
project
1979–1982



Bridge of Houses
project

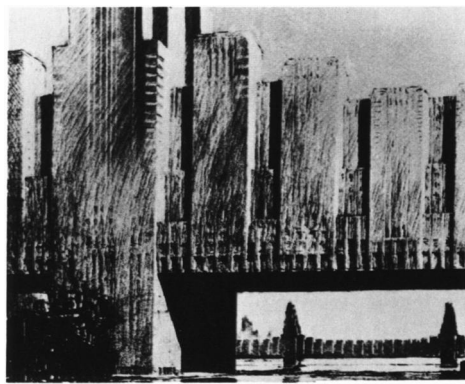


A reinterpretation of a more unusual urban vernacular type was proposed in the Bridge of Houses project of 1979–1982 for a series of houses to be built over an abandoned elevated-rail link in the Chelsea area of Manhattan. Ancient examples of the type can be seen on the bridge at Bad Kreuznach, Germany, and the old Pont au Change and the Pont Marie in Paris. Modern examples include Hugh Ferriss' proposal for apartments on bridges as well as Raymond Hood's residential bridge project for New York.

Ancient houses on
the bridge at
Bad Kreuznach
Germany
ca. 1650

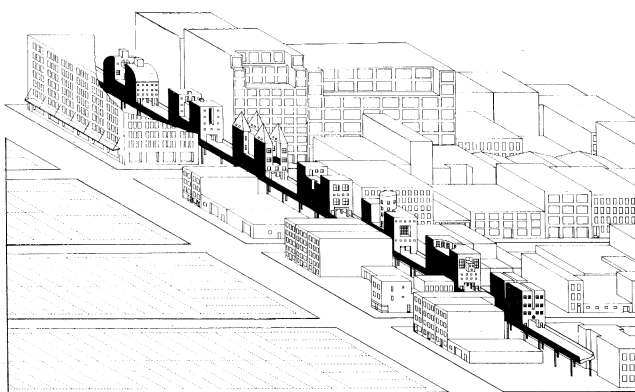


«Manhattan 1950»
project
Raymond Hood
1929



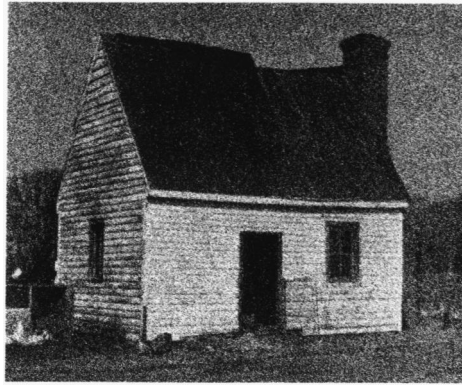
The Chelsea scheme proposes nineteen houses over a continuous public promenade linking the New York Convention Center (at present under construction) and the West Village district. This plan would create a public place of unique character: covered arcades lined with shop stalls and sitting areas alternate with open elevated squares or gardens. The alternating plans and sections of the houses reflect their different uses; student housing, luxury flats, economy studios, and housing for older people would be mixed in a proportion determined by the eventual financial program of the public agencies involved.

Bridge of Houses
project

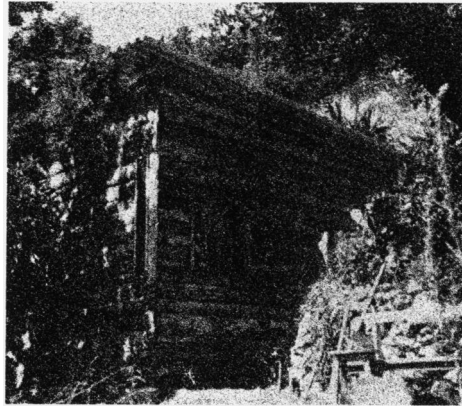


The urban and architectural issues addressed in the proposal include reinforcement of the urban pattern by maintaining a street wall, advocacy of hybrid forms or combined architectural types, and the preservation of specific site history by building on the foundations of disused structures.

One room house
Northhampton
County, Virginia
19th century



Cabin
Cap Martin, France
Le Corbusier
1952



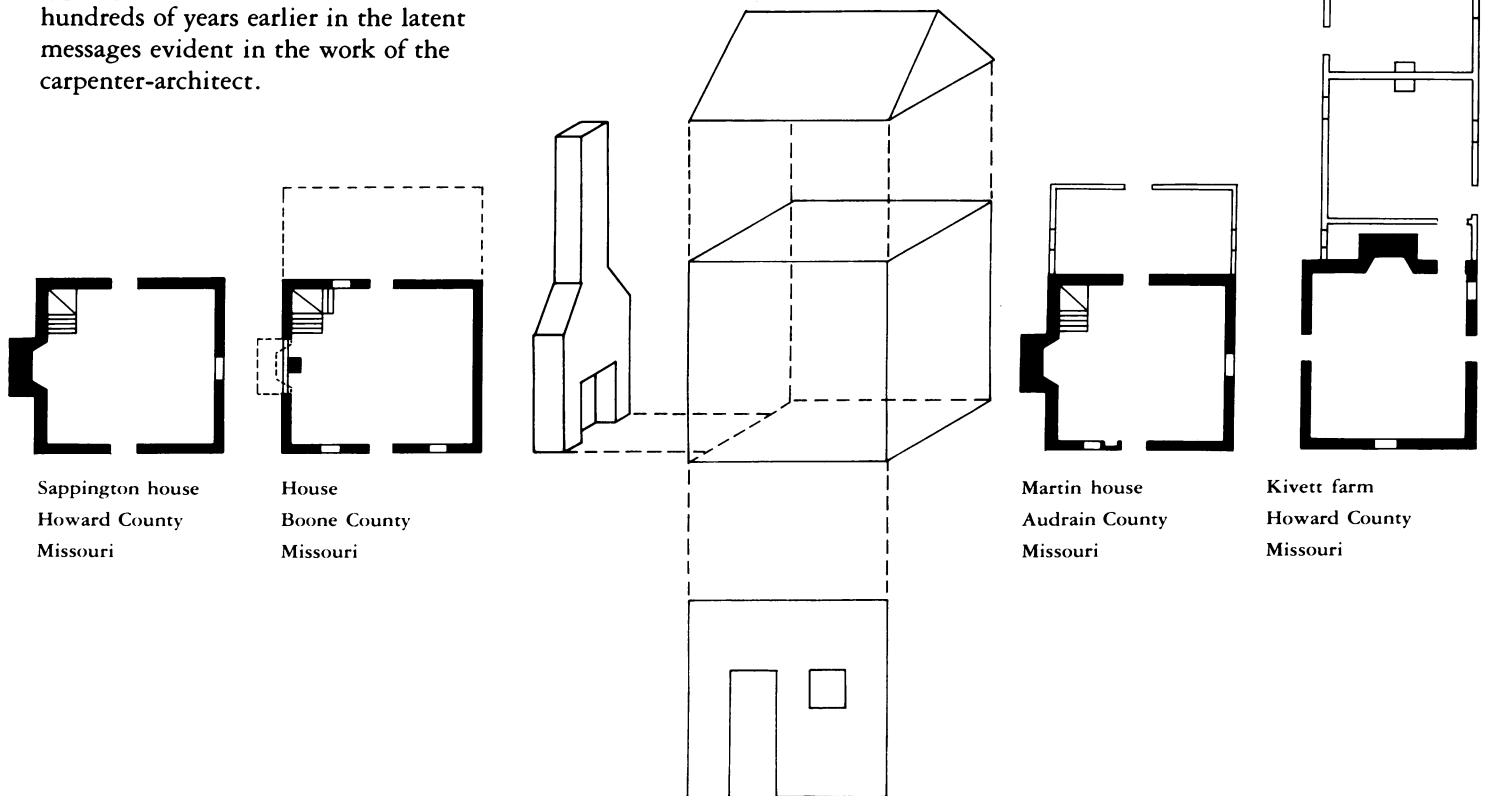
«And yet, I thought, as I walked home along the little path from Cap Martin, how strange that this architect who had spent a lifetime dreaming of radiant cities for thousands of inhabitants, of machines for living for the masses, who thought that cities were never populous enough or skyscrapers ever high enough, how strange that this man can be truly happy only in the solitude of his 13-square metre cabin on a lonely cliff above the Mediterranean.»

Brassai on Le Corbusier

Rural vernacular

A focus on the simple elements of indigenous rural buildings presents fundamental principles. Vernacular methods of construction are determined by the natural materials used. Identical building type forms (plan-section schemata) frequently recur in different regions but materials vary depending on those most readily available. For example, the basic one-room house recurs throughout the country, made of clapboard in New England, stone in Utah, brick in Virginia, and sod in Nebraska. The early-twentieth-century architect's belief in adherence to the nature of materials (Frank Lloyd Wright) or adherence to basic building types (John Welborn Root) lurks hundreds of years earlier in the latent messages evident in the work of the carpenter-architect.

Elements of one room house



Sappington house
Howard County
Missouri

House
Boone County
Missouri

Martin house
Audrain County
Missouri

Kivett farm
Howard County
Missouri

The forces shaping primary vernacular models unite the extrinsic and the intrinsic, establishing a basic unified character. The interior organization of space often gives order to the exterior. For example, the freely arranged window pattern of the rear and side walls of a rural house responds to the interior organization of the rooms, while the symmetrical window arrangement of the entry facade provides frontality. Additions are placed on the freely organized sides, so as not to disrupt the simple front. The inherent restraint of the indigenous rural house unifies its various elements; exterior, plan, and section are a compositional whole. In contrast, the forces determining commercial-strip vernacular tend to separate the intrinsic and extrinsic. The plan-section character of a building is often relegated to a dependent position behind the extrinsic commercial signage. It is necessarily an architecture of appearances rather than essences. At its most elemental, architecture is mass, line, plane, and space organized by adherence to type and geometry. The elemental rural house is not decorated with a representational facade or other symbols. Adherence to the schemata of plan-section and geometric form unites the entire house as a single representation.

a
Young house
Vance County
North Carolina
19th century



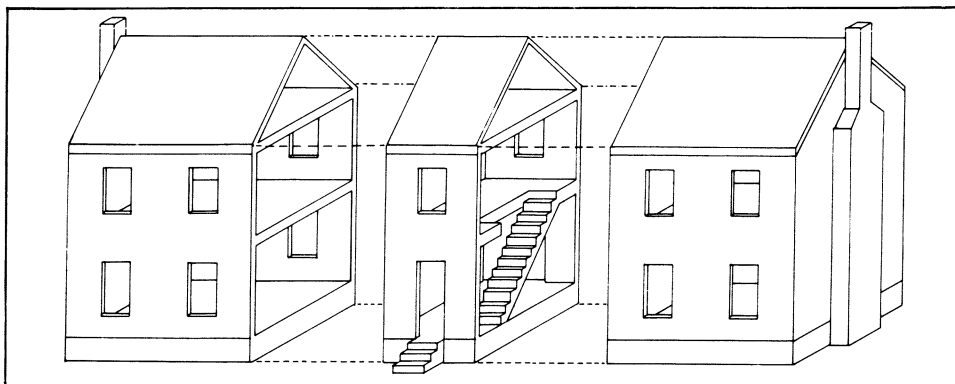
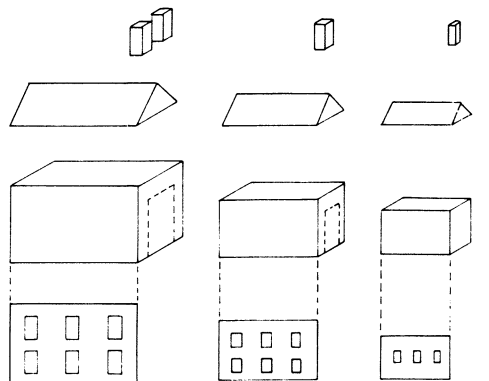
c
I type house

b
Pinet house
Callaway County
Missouri
1883

d
Elements of the
telescope house

Telescope house

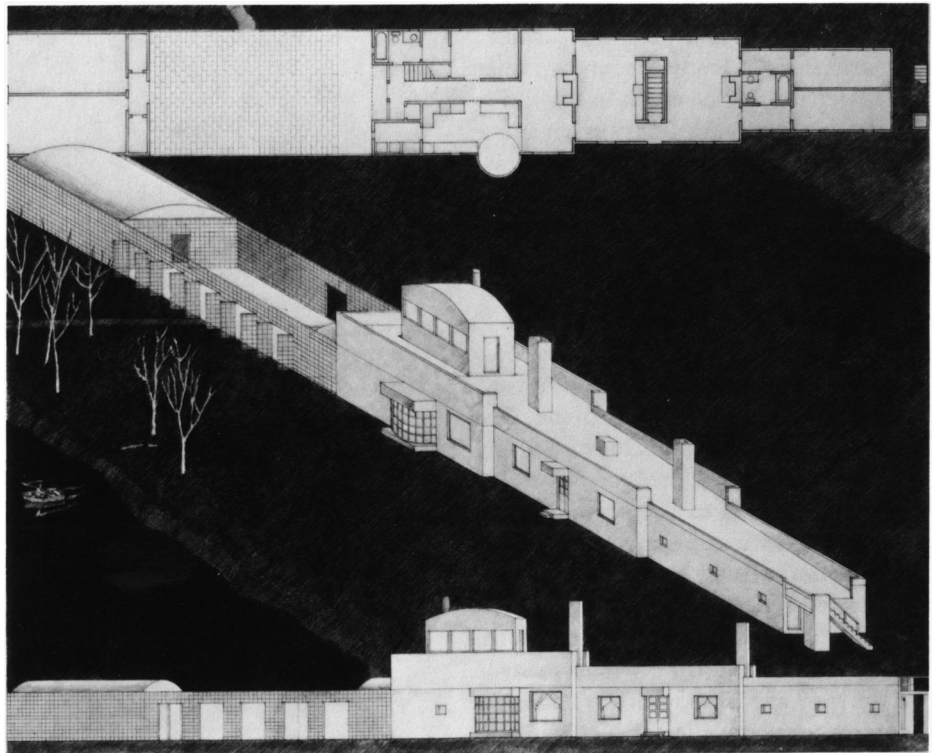
While designing a residence in Still Pond, Maryland, on Chesapeake Bay, during the winter of 1978, we encountered numerous examples of houses of the telescope type. A telescope house has three main characteristics: roof lines that are all about the same pitch; outside walls making nearly regular setbacks in a progression of adjoining volumes; and overall form in descending masses, so that theoretically the sections of the building could collapse neatly into each other. In a pure telescope type the size of the window opening is directly proportional to the building mass in which it occurs. Fireplace chimneys are generally located on the wall of adjoining segments. In some of the telescope houses the large section was built first, then added to in a descending order. In others the small section came first, with the larger added on. In still others all sections were built at the same time.



Our given circumstances—a long, narrow site (approximately 350' x 45') and a program that called for divisions—seemed well suited to a modern interpretation of the historic type. The clients, a retired couple, required a house divisible into three parts. The largest would constitute the basic year-round quarters. The middle third—a formal dining room and living room—and the smallest part—bedrooms—would be used only when there were guests; for most of the year both would be closed off to save on fuel and maintenance. In order to have south sun as well as a north view to the bay from each room, a one-room-wide plan set parallel to the water's edge worked perfectly and was consistent with the historical model.

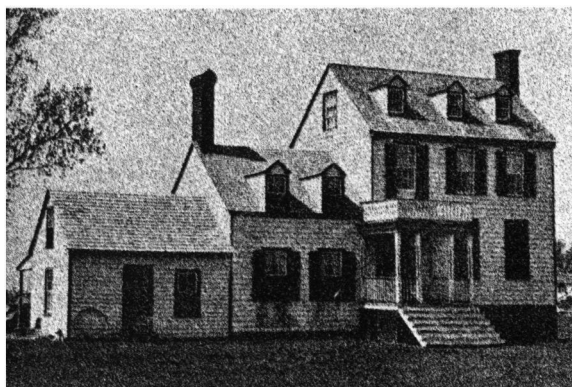
In developing the design, golden section proportions were used to determine overall massing as well as location and sizes of smaller elements. Though they are obscured in many of the built examples collected in the research, the primary massing and plan-section characteristics of the type are developed and refined with proportional rigor in the modern parallel.

g, h
Wyble residence
Still Pond, Maryland
1978



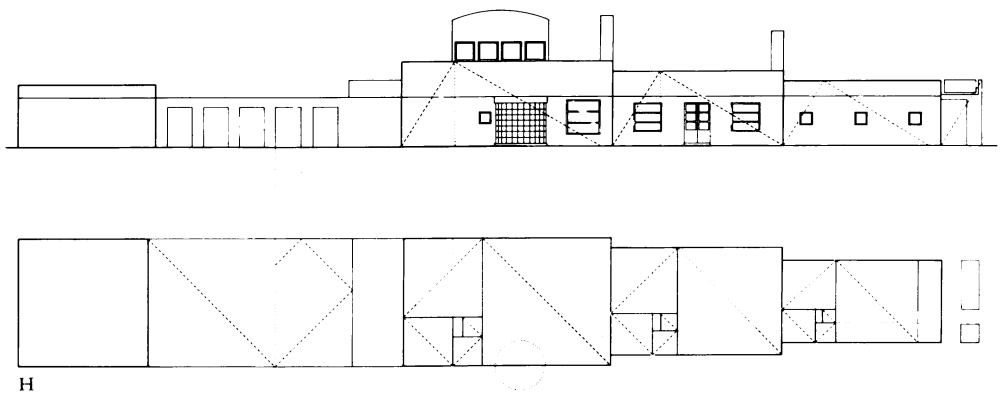
G

e
Hard Bargain
Charles County
Maryland
1780



F

f
Mt. Airy
Harborton, Virginia
1849



H

Dogtrot house

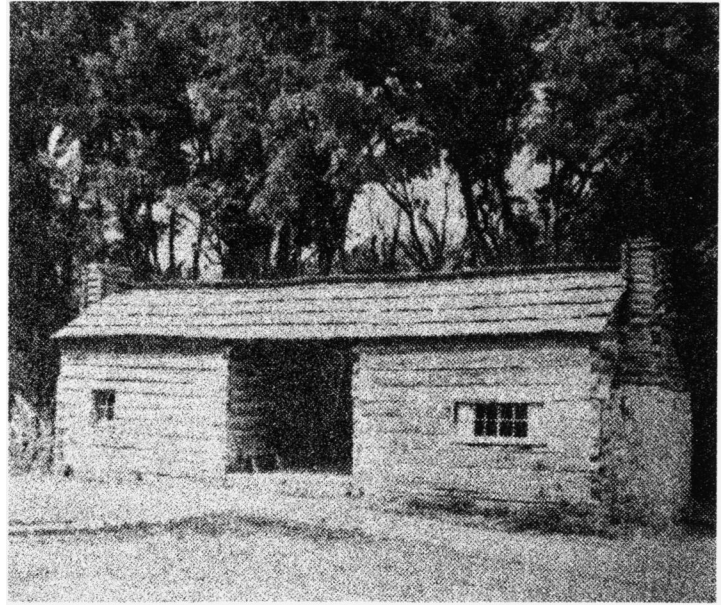
The dogtrot house consists of two rooms on either side of an open passage joined by a common gable roof. In some examples a sleeping loft is added in the roof over the open passage and in others this central hall passes through a two-story house. This type was prevalent in the South and Southwest; the passage functioned as a shady breezeway, where meals could also be taken in hot weather. The dogtrot or possum trot was named by early observers who saw the purpose of the passage as an animal shelter—a place where dogs could run through the house.

The dogtrot type was the abstract analogue for the design of a house on a heavily wooded site near a potato field on the South Fork of Long Island. The client's requirements included a «lap pool» (an 18' x 60' pool for swimming exercises) as well as a separation between the guest rooms and the owner's quarters. The house and guest house are divided by the pool running east-west, while views from the houses are to the north and south. This plan provides many different views into the trees and maximum privacy for each room. The second floor living room of the main house allows for breezes through the windows facing north and south. The kitchen is located between the winter dining room and a screened porch at poolside for summer meals. End walls of the houses, aligned with the edge of the pool, are doubled in the water's reflection from either direction of approach. The buildings contain a little urban place, like a slice of Venice in the forest.

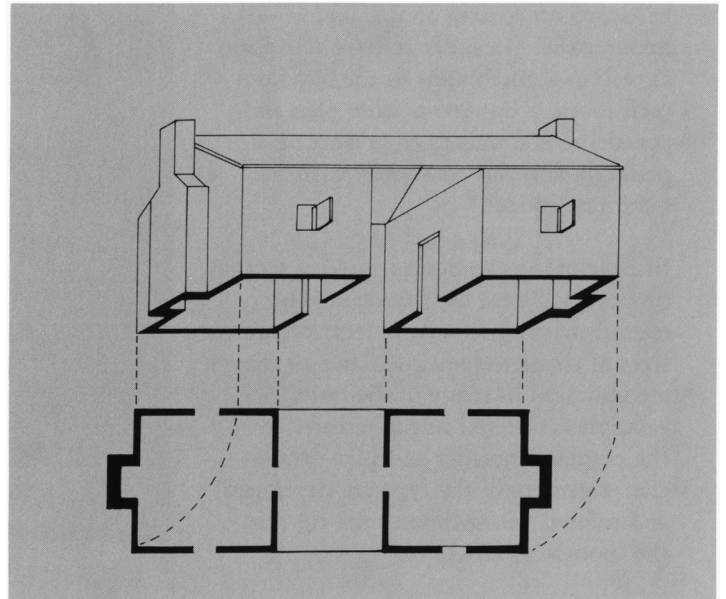
When approaching a dogtrot, one sees the landscape beyond through a large opening, which establishes an empty center of gravity. The Long Island House is a transformation of this vernacular model, retaining the idea in the central void with the pool. Two building elements frame this void which is intensified by the pool's reflection of the site's old trees and the sky.

Steven Holl

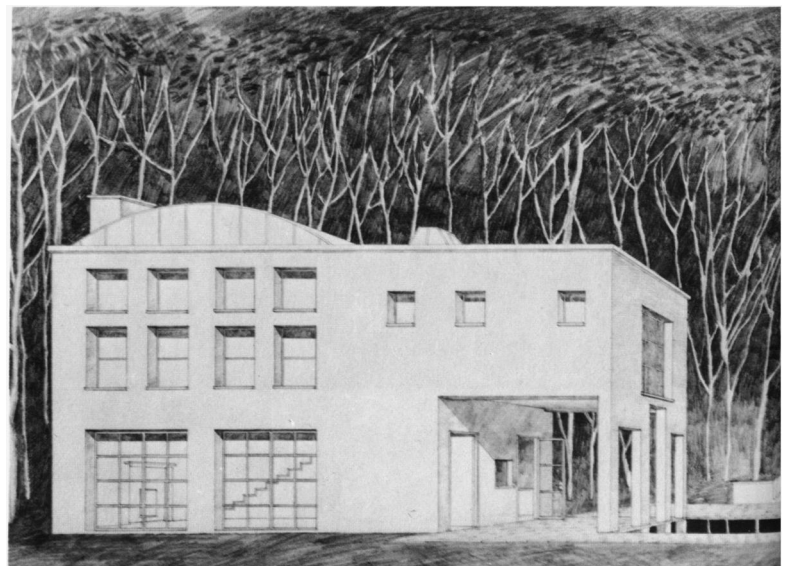
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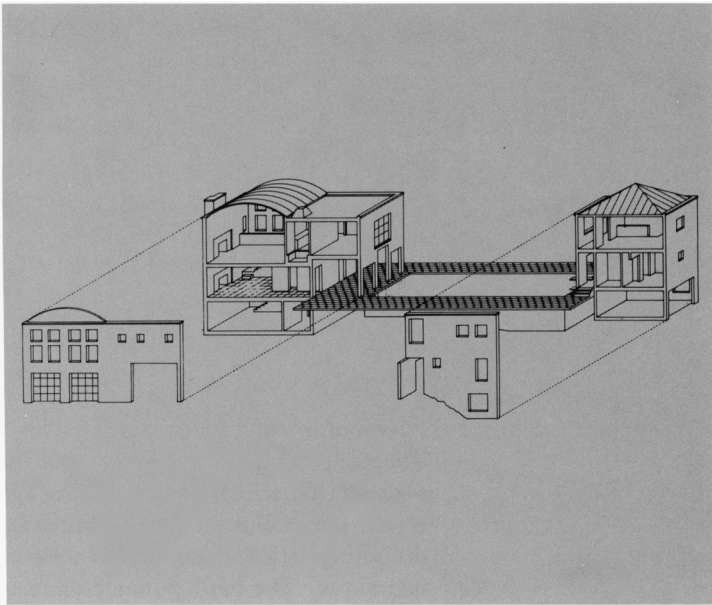


Dogtrot house
Tennessee

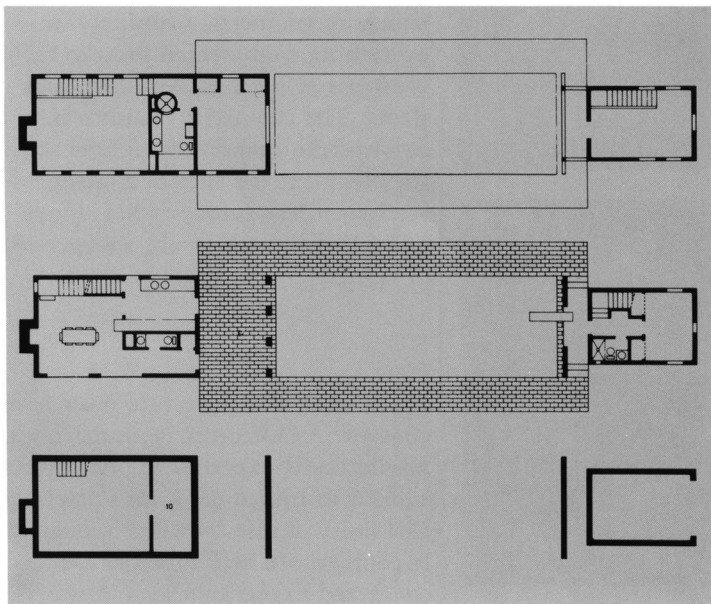


Upturned dogtrot
house



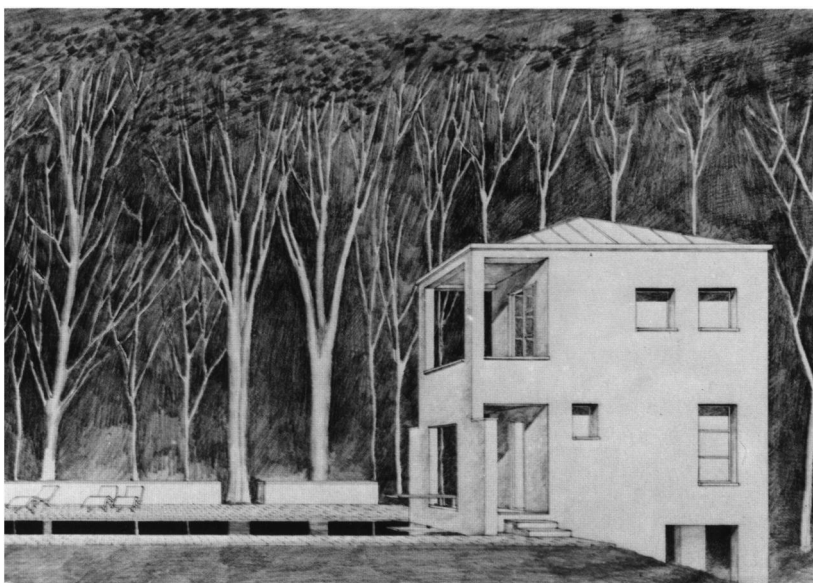


Van Zandt residence
Long Island
New York
1983



Van Zandt residence
plans

Van Zandt residence



Questioning regionalism

How is a cultural statement made in a modern building? The question is bound up with the impossibility of recreating true regionalism. The local materials and traditional craft of the simple rural house have given way to industrialized products, and the carpenter-architect has disappeared as rapid population migrations have transformed North America into a vast nonregional mass. Cost-effective mass-produced items (windows, exterior siding, appliances, mechanical systems, and the like) give local builders in California, New England, and Florida a similar palette, supplied by a few nationwide companies.

It is counterproductive to seek a return to preindustrial technique when a more efficient and cheaper building component can be made to fit a given design. Regardless of the possibilities and constraints of industrialized construction, local typological prototypes can inspire new forms. Infusing current building techniques with the essence of traditional building types might strike a balance between new forms and traditional roots, reestablishing internal cultural connections in architecture. Whether the original type is entirely transformed or is merely reformed, the attempt is aimed not at regionalism or style but at cultural reflection.

The mobility characteristic of the population of North America today is echoed in the mobility of designers and architects. The nature of our contemporary culture finds the would-be regionalist with simultaneous commissions on the east coast, on the west coast, and in the South. Given the antiregional forces of industrialization and mobility, other ways to preserve local meanings and cultural continuity must be sought. Illumination of specific site history and transformation of culturally rooted types are two possible strategies.

Seven principles for the interpretation of urban and rural vernacular

A traditional vocabulary of culturally based building types can be transformed and reinterpreted with invention; but invention needs limitations—principles. Distinct from ideology or doctrine, principles form the basis on which other decisions are made. Rather than unbendable laws, these are determining characteristics for integrating vernacular research with domestic projects.

1

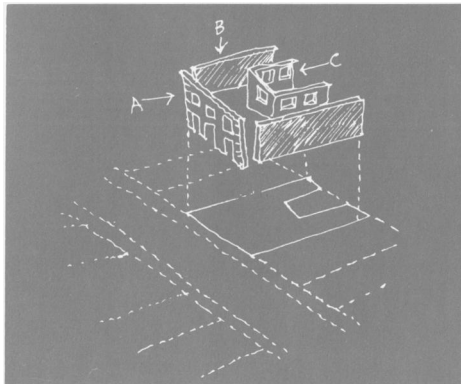
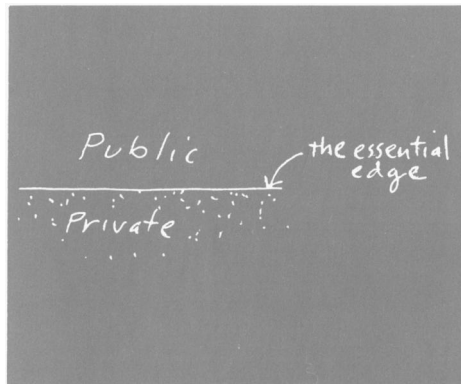
Public and private

Definition of the public space is the essence of urban construction; the line separating public from private is the primary edge. Even a rural house has a public and a private side.

2

Urban form

An urban building or building group has a direct relation to an overall city plan or grid. As part of the overall city fabric, a building has three types of walls: the public facade—most important as it establishes frontality; blind or party walls, possibly semi-open; and walls internal to a block or courtyard. Interlocking urban buildings forming the geometric solids and voids of a city are characterized by various relations of these three basic outer faces, subordinating them to the larger urban pattern. In the modern American city the sheer size of new nonpublic constructions which fill out an entire block (for example, developer skyscrapers) may make them automatic monuments. A monumental building standing in contrast to surrounding fabric distinguishes itself—all sides are public facades with civic responsibility.



3

Plan and section

The modern interpretation of recurring plan-section schemata of building types is a means of linking architectures (and designing cities) regardless of style or technique. The basic potency of an architectural form is in plan and section, which yield internal and external relations of mass and space.

4

Geometry

Indigenous constructions consistently adhere to geometric simplicity in everything from overall mass to such elements as porches, windows, and doors. The geometric relations in architecture connect the simple and the complex, the ancient and the modern. Clear geometry has always embodied timeless goals, independent of fashion.

5

Idea

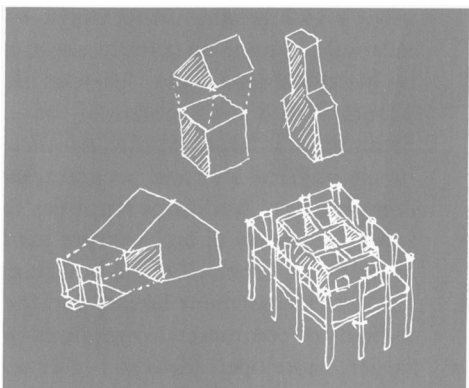
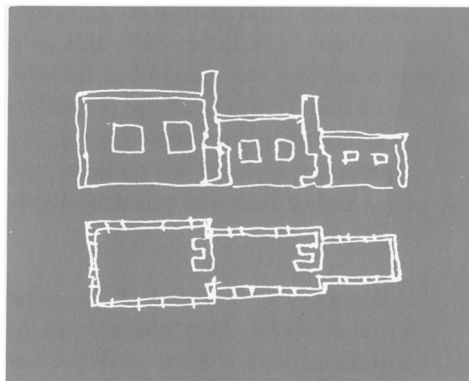
Every work of architecture must have a concept. Architecture is intuitively and intellectually experienced. Architecture adheres to Immanuel Kant's description, «The unity of rule by which a manifold of contents are held together and connected to one another.» Intuitive passion joins the intellectual spirit when an architectural whole is more than a collage of parts.

6

Ornament

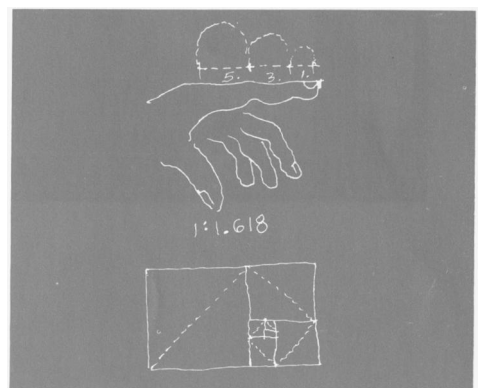
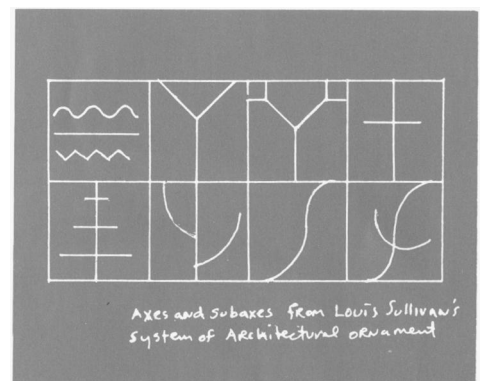
Architecture has an emotional life if it is born from an idea; the purpose of ornament is to amplify the idea. The common alternative is to overlay a lifeless architecture with arbitrary patterns. Louis Sullivan explained, «While the mass-composition is the more profound, the decorative ornamentation is the more intense. Yet both must spring from the same source of feeling.»

The principle that detail or ornament be subordinate to mass is ancient. From the obelisks of the Fourth Dynasty to the simple masses of thirteenth-century Europe, dominating clarity of mass is never obliterated by detail. This principle, evident in the work of many masters, for example Ledoux, Schinkel, and Sullivan, is also evident in vernacular architecture. The cubic form of a carpenter-architect's house is pierced by windows and doors whose surrounding detail is restrained and proportioned to the mass.



7
Proportion

The division of a measurable whole into parts—the establishment of mathematical relations in a building—was intuitive for the vernacular architect. The refinement of architecture has depended since ancient times on the establishment of harmonic interrelations in a building; masterpieces have reflected a chain of related proportions. Of the various proportional systems, the role played by one proportional number in particular— $1 : 1.618$ (the Golden Section)—stands out. Its prevalence in plant and animal forms brings us closer to nature; the spiral of growth in the nautilus shell, the proportion of joints in the fingers of a human hand, the branching limbs of a tree or leaves of a flower, all hinge on this proportional number. Kepler called it «a precious gem, one of the two treasures of Geometry.» A proportional order can refine architecture with an ancient mathematical harmony and reconcile it with nature.



In continuing the modern pursuit of open vocabulary, expression does not follow directly either from an interpretation of a historical style or from a literal expression of function. Many of the expressive methods of mid-twentieth-century practitioners may be critically examined as a narrowing, rather than an opening up, of architectural vocabulary. Exit stairs pulled out of a building envelope as a massing device, or expression of the structural frame or the mechanical systems, for example, do not have positive meaning in themselves. They are the results of a single idea about the literal exposure of function as a formula for architectural character. This attitude is derived from Louis Sullivan's axiom «form follows function,» but he was never merely literal about it. Sullivan's great contributions were lyrical expressions in form which grew out of ideas rather than the physical display of function.

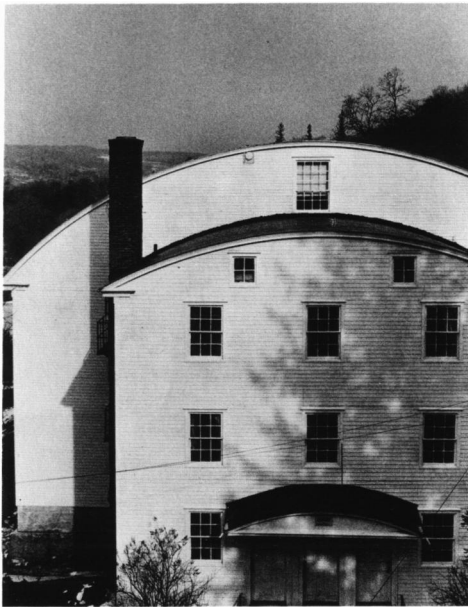
It is precisely the realm of ideas—not forms or styles—that presents the most promising legacy of twentieth-century architecture. The twentieth century propels architecture into a world where meanings cannot be completely supplied by historical languages. Modern life brings with it the problem of the meaning of a larger whole. An increase in the physical size and programmatic complexity of buildings amplifies the innate tendency of architecture toward abstraction. The tall office building, the urban apartment house, and the hybrids of commercial complexes call for larger, more open ideas to organize an architectural work. The organization of overall form depends on a central concept around which other elements remain subordinate. A concept unites whereas application of an historic style fragments. When a clear idea is the heart of architectural expression, it can be individually related to the circumstance while remaining distinct from a general theory or style. Examples of meaningful form molded by abstract concept, the idea-based constructions realized by Louis Sullivan, Frank Lloyd Wright, and Eero Saarinen remain clear expressive works today. Their meaning does not require a consistent language or style that must be repeated from one project to the next.

Invention and modernity

Modernity in its most positive sense has been a great liberator. In the twentieth century, literature, art, music, and architecture have moved toward freer expression. For North American architecture this thrust has an intrinsic link to architectural beginnings; ignoring convention and relying on invention was natural to the vitality of the country. Early carpenter-architects were essentially early moderns in their creation of new types and forms. There were few books and no photographs, and because travel was difficult and slow the early settlers could not study previous architectural models. The ingenuity of carpenter-architects was soon overshadowed in a society with a sense of cultural inferiority. Imported models fostered the «American Renaissance Style.» However, the earliest vernacular forms remain linked to modern architecture by a liberating sense of invention.

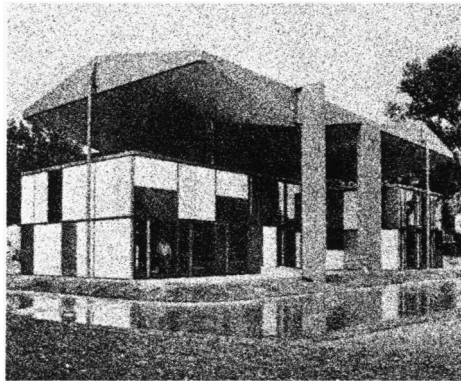
Invention did not always mean the imposition of individuality. The benefit of the whole community inspired the inventions of the New England Shakers, for example. This group invented the circular saw, the metal pen nib, window sash weights, the common clothes pin, and the flat broom, among other things, without crediting any individual. The architecture expressed a will to invent restrained by a wonderful sense of purity; strangely idiosyncratic, it seems nevertheless to return to universal elements. Invention in architecture need not degenerate into a contest of merely formal or stylistic consequences. Balanced with cultural connection, invention must intensify, enliven, and give strength to architecture.

Shaker Meeting
House
New Lebanon
New York
ca. 1850



The uncompromising realization of an intuitively held idea is manifested in the simplest house of a carpenter-architect, for whom there was no difference between intuition and theoretical thinking. As Ernst Cassirer clearly put it, «All intuition is bound up with theoretical thinking.» For today's architect the same goal must be held conceptually; where numerous individuals work as a team to achieve a construction, a unified result demands a concept as well as strategy for realization. A clear architectural idea, frankly stated, is analogous to the intuition that marked the path for the carpenter-architect.

a
Pavilion for
Heidi Weber
Zurich
Le Corbusier
1965



A

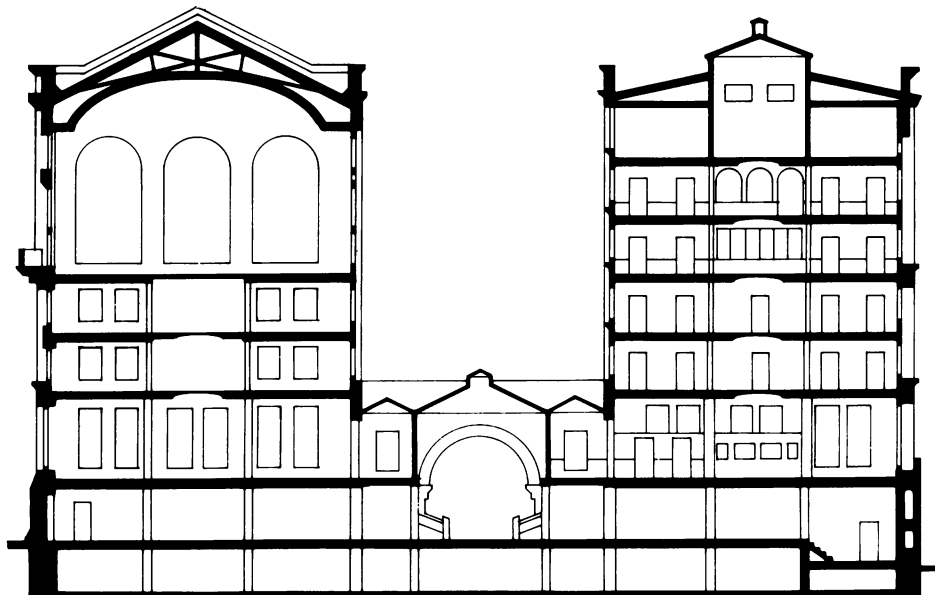


B

b, c
Board of Trade
Building
Kansas City
Missouri

Internal opposition as an organizing idea

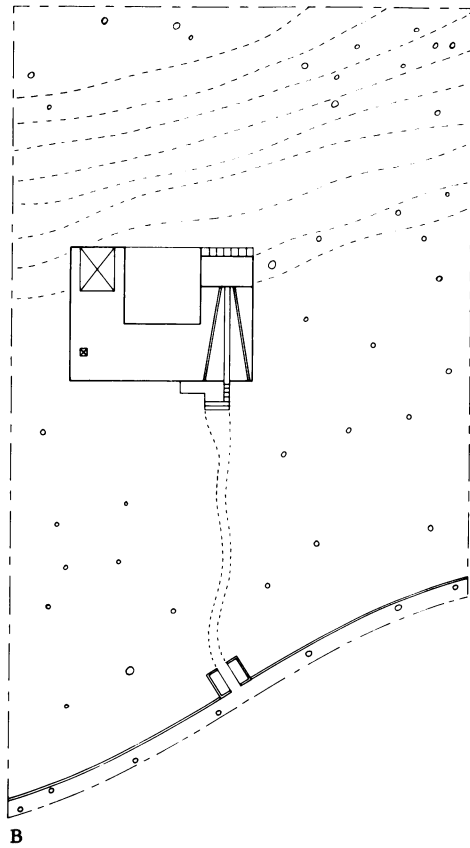
Opposition of forces is an organizing idea which can yield a dialectical architectonic form. For example the Kansas City Board of Trade building by Burnham and Root is charged with counterpoint: the two wings of the H type building have differing internal arrangement, and the expression of the trading hall atop one wing is in asymmetrical contrast to the other. A similar counterpoint can be seen in the asymmetry of twin towers in medieval cathedrals such as the Trier Cathedral in Germany. Among the clearest modern structures organized around the idea of counterpoint is the Pavilion for Heidi Weber by Le Corbusier in Zurich.



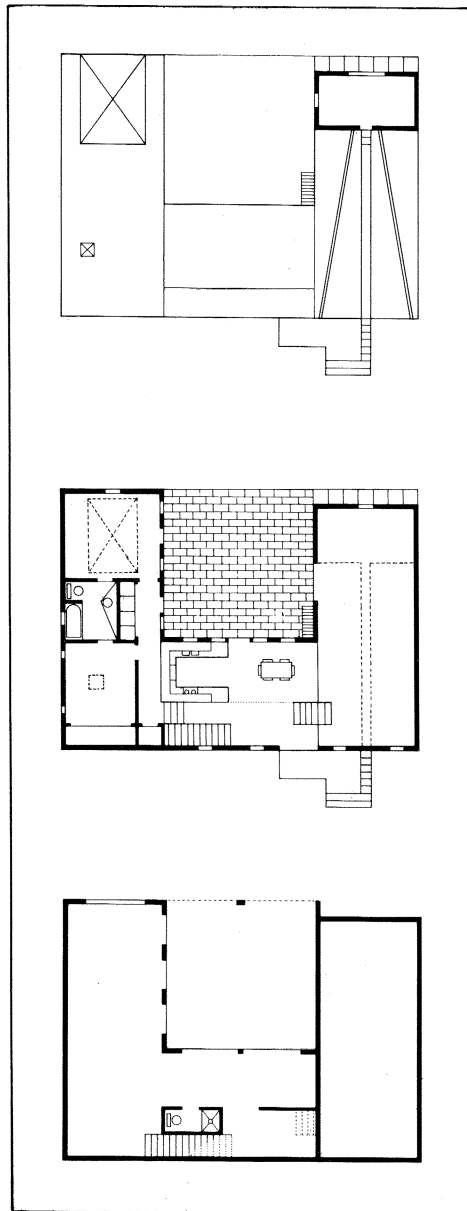
A radical departure from a typological model was taken for a studio-house we designed in the summer of 1980. The plan type was transformed through the internal counterpoint of program. The site, a thickly wooded lot on Staten Island, overlooks a 60-foot ravine. The studio-house for a young couple, both artists, has no conventional living or dining room, in favor of two larger studios and a large kitchen. The studios were intended to respond to the nearly opposite sensibilities of the artists. She paints floral landscapes, loves sunlight, and keeps cats in her studio. He makes black concrete sculptures, hates pets, and does not care for sunlight. The clients suggested that the best way to respond to suburban surroundings was to preserve all trees and natural vegetation and isolate the building at the edge of the ravine.



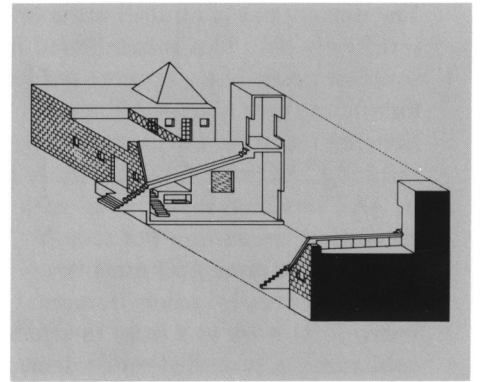
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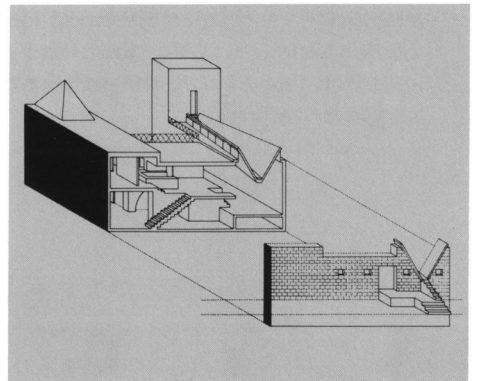
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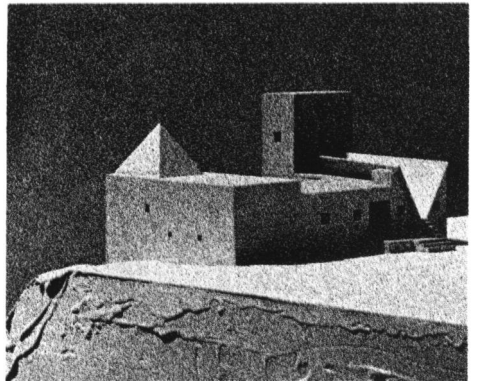
C



D



E



F

a
U type house
b
Metz House
Staten Island
1980
site plan

c
Metz House
plans
d-f
Metz House

*Extension of ancient concepts
as an organizing idea*

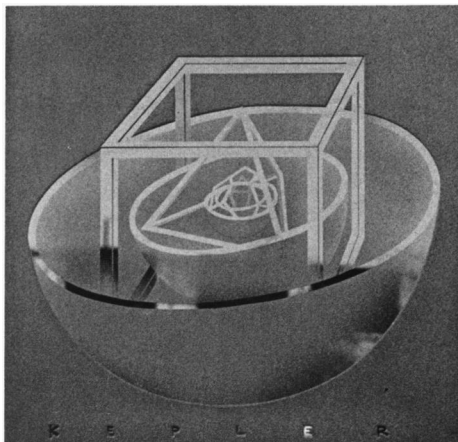
The traditional U type plan was used, with the courtyard facing the ravine. The theme of an urban building type, an island in the forest, is carried out in all elevations: the front facade is articulated in integral-color concrete block; the side walls are painted black, like party walls in a city; the courtyard is painted white for maximum light.

Because of the unique nature of the clients' needs, we explored a major transformation of the neutral U type by charging each wing with opposite characteristics. The painting studio in the north wing is lit by a continuous clerestory window under the butterfly roof, which acts as a light diffuser. This roof also serves as a ramp leading to a small room overlooking the ravine, used for solitude and study. In the opposite wing the sculpture studio on the lower level opens on a grotto and an outdoor work area. On the upper level of this wing the child's bedroom has a special roof to give the feeling of a separate little house.

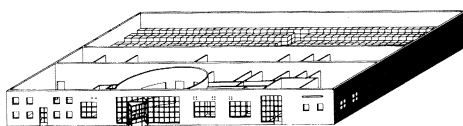
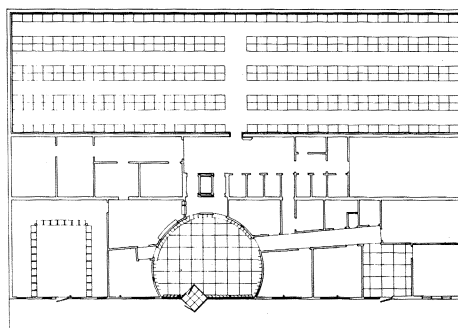
While the U is generically a symmetrical type, this house explores the potential of asymmetry conceptually as well as formally in the dialectic between light and dark space, open and closed space, and down and up sections.



A



B



C

a
Safe Depository
Fairlawn
New Jersey
1982

b
Etched glass
Kepler's *Mysterium
Cosmographicum*
c
Safe Depository

Metaphorical or abstract concept was a basis for architecture in many ancient cultures. Ancient Chinese architecture, for example, contained a geometric idea of the universe: heaven was round, earth was square, and the ideal town was quadrilateral with walls pierced by gates corresponding to the twelve months of the year.

The ancient Egyptians organized plans around the concept that east meant rebirth of the sun and life, and west was the direction of death—another metaphorical structure of an ancient cosmology. Vico observed that even the tiny constructions of the most primitive people begin in metaphor and imaginative ideas. They begin in poetry, not in science.

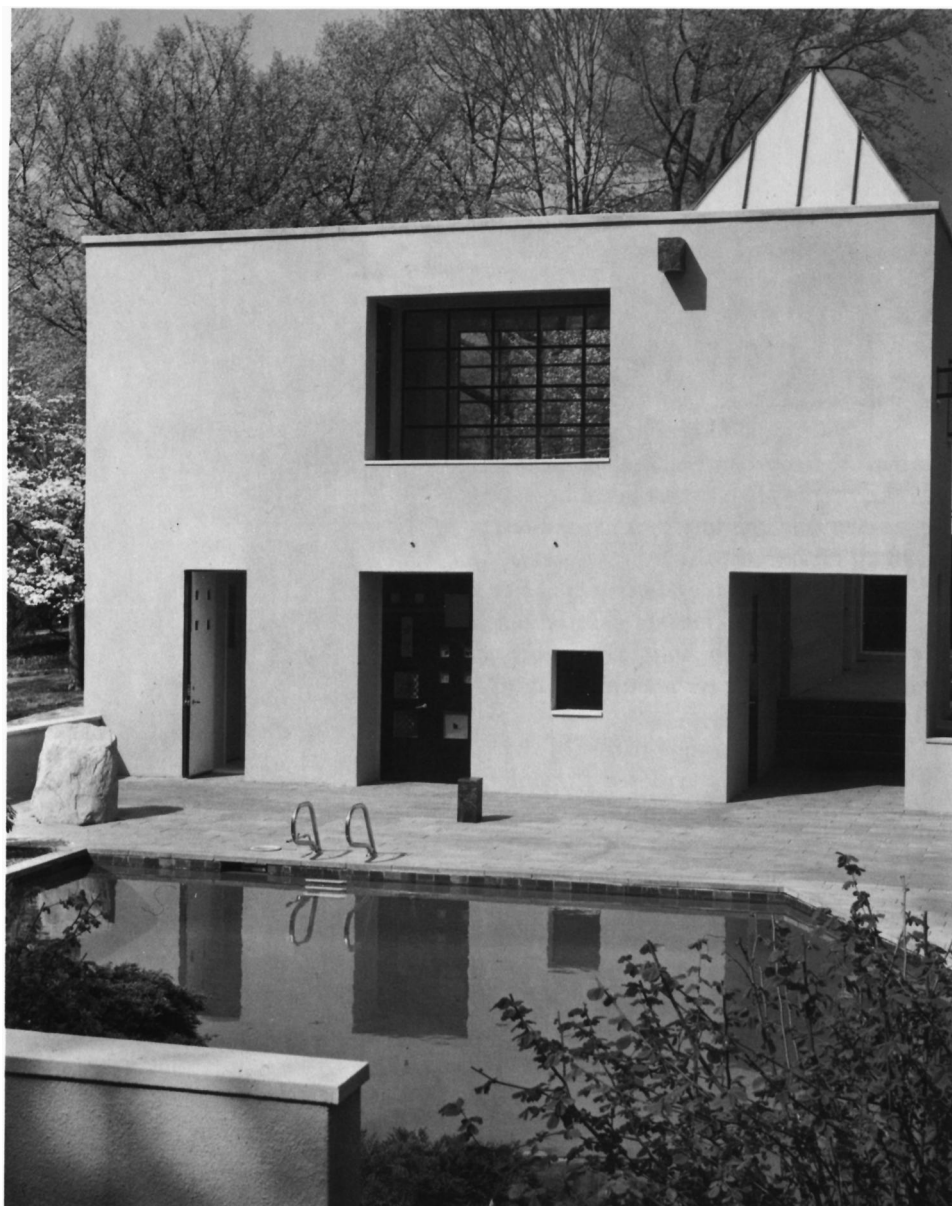
In the renovation of an existing concrete-block building into a safe-depository bank which we completed in 1983, the building plan was organized from the most rational and dense at the rear (rows of steel safe-deposit boxes) to the most irrational and thin at the front (public lobby). The site, an existing commercial strip in Fairlawn, New Jersey, dictated constraints yielding a plan with no special qualities other than organization on logarithmic proportions.

The elements of the public lobby record proportional and cosmological concepts. The seventeenth-century concept of the harmony of the spheres (the ideas that the separate spheres of the cosmos move around the earth at different velocities, producing the basic musical intervals) together with the ideas on harmony and proportion of Johannes Kepler (depicted in his diagram of the five regular solids inserted into the orbits of the planets) inspired a planetary frieze circling the top of the lobby wall. Cubic interpretations of the nine planets are bent by the curvature of the space. Ornaments carved into the glass of the vestibule explore similar celestial themes.

Traditional bank lobbies were once richly characterized with classical allegories recorded in ornament. Louis Sullivan's midwestern bank lobbies, for example, embody a lyrical interpretation of his idea of the organic transcendental seed germ. The aim of our project was to suggest that the architectural character of a public space may be based on a modern interpretation of an ancient idea.

History of site as an organizing idea

The history of a particular site can be illuminated (using a modern open vocabulary) to communicate local meanings. This idea was suggested by Rudolf Steiner when he argued in the 1910s that any site has a physical history of its own and that we have a critical choice whether or not to acknowledge it. A physical connection with history is established, for example, in Cuzco, Peru, which has suffered periodic destruction by earthquake. However, the pattern of the town remains a testament to its oldest culture because the rubble-built upper portions sit on first-floor foundations of giant stones set with razor-gap precision by the Incas. Whether it is the reuse of foundations forming a composite history of a site, the transformation of existing structures, or a modern construction reflecting something that has long since disappeared, the history of a site can be the basis for new constructions with local historic connections.

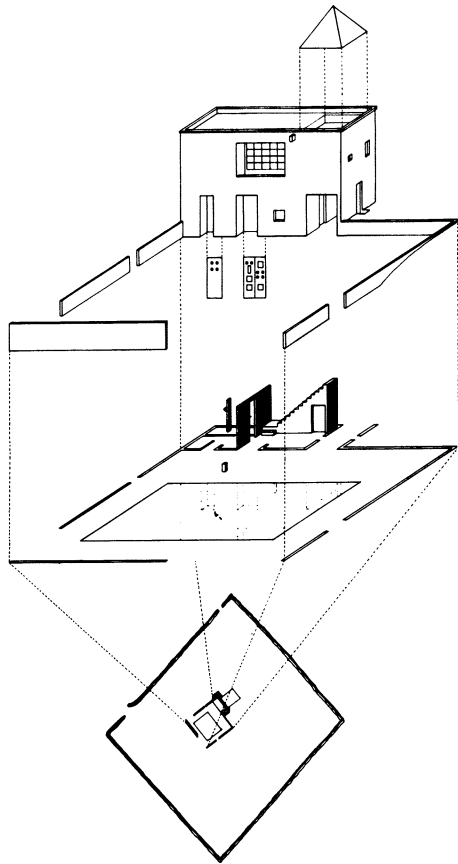


The idea of illuminating the history of a site organized the plan for a small sculpture studio-poolhouse addition we made in 1981. The suburban site in Scarsdale, New York, dates from the transference of property rights by King George in the early eighteenth century. The land is marked by stone walls placed to define boundaries at the time of the original transference. The newly constructed walls enclose an existing pool and form a courtyard at the center of the site in recollection of the older stone-wall boundary. A large rock found during excavation was upended in the middle of the courtyard as a material microcosm of the history-of-the-site idea. The poolhouse building is stretched thin to form the north wall, with an entry portal to the courtyard cut through it. The whole project is organized in a chain of proportions that begins in the overall 55-foot square of the pool court and descends to the smallest window openings.

Poolhouse
Scarsdale
New York
1981



Poolhouse
interior



Poolhouse
site projection



Poolhouse
Existing stone wall

The equilibrium between cultural connection and modernity in these projects leans toward invention in some cases and cultural connection in others. Rather than a thesis-antithesis, these forces coexist in a teeter-totter suspension. If the heavy side of this seesaw shifts in response to a particular place, in another circumstance a tip in the other direction would not be contradictory. This balance holds clarity as an essential, mysterious, and marvelous quality of architecture. However, architecture manifests itself beyond our verbal or diagrammatic representation of it; in a sense it is outside of anything we have discussed.

The ultimate aim of any art does not occur within it, but elsewhere—in a spiritual search. While this quest joins architecture to that which is beyond the purely physical, the requirements of physical material connect it to something before its physicality: a material essence.

Material has «absence» in the positive sense that Paul Valéry wrote of it in the dialogue *Eupalinos*. Literal absence is evident in the cavernous void in a limestone mountain in Indiana which exists as the testament to a limestone skyscraper in New York. But the essence of material should not be confused with the material reality of building. Whether stone, sand, wood, or glass, the material of architecture is a link to the natural and human.

The Chinese painter Wang Wei (699–759), painting in words instead of colors, connected the natural essence of physical materials to painting in this poem, *In the Hills*

*White pebbles jut from the river stream
Stray leaves turn red in the cold autumn
No rain is falling on the mountain path
But my clothes are damp in the fine green air.*

This selection of research and projects, done between 1976 and 1983, was presented in 1983 as a slide lecture at Southern California Institute of Architecture, at Princeton University, at New York University, and in the CAUSA series in Calgary, Alberta. I have tried to incorporate into this synopsis the questions and comments from those audiences. The material is not a synthesis of theory and practice but summarizes research (published in Pamphlet Architecture 5 and 9), proposed projects, and a few built works.

The research, undertaken with grants from the Graham Foundation and the National Endowment for the Arts, focused on collecting American building types that complete the geometry of the typical gridded city («The Alphabetical City») and recurring house types from across the country («Rural and Urban House Types in North America»). Concentration on American vernacular examples is circumstantial. In India, China, Australia—in any culture—an intention to illuminate local history with modern means would yield physically different but philosophically synonymous results.

Steven Holl