

Adapting the Architectural Avant-Garde

A design proposal for Paul Rudolph's Orange County Government Center

Beth Miller

Submitted in partial fulfillment of the requirement for the degree

MASTER OF SCIENCE IN HISTORIC PRESERVATION

Graduate School of Architecture, Planning and Preservation

COLUMBIA UNIVERSITY

May 2014

Acknowledgments

Table of Contents

Preface

Introduction

I. Modernity and Obsolescence

II. Adapting the Aging Avant-Garde

III. Orange County Government Center

IV. Architectural Analysis

V. Case Studies

VI. Developing a Counter-Language

VII. Distilling and Implementing a Design Methodology

Conclusion

Endnotes

Plates

Acknowledgements

I would like to thank my advisor, Theo Prudon, for his encouragement, support and wisdom, as well as his unprecedented work in the effort to preserve modern architecture. I would also like to thank my readers, Belmont Freeman and Diane Lewis, for their invaluable guidance and design expertise. I am indebted to Sean Khorsandi, Gred Marcengelo, Timothy Rohan, Stan Eckstut and Frank Sanchis for sharing their knowledge of Paul Rudolph and his work, and to Daniel Abramson, for his research regarding the concept of obsolescence in architecture. Finally, I extend my gratitude to Nancy Kearing, for her continuing efforts in spearheading the fight to save Paul Rudolph's Orange County Government Center.

“At the same time that the problems increase in quantity, complexity, and difficulty, they also change faster than before,” and require an attitude more like that of August Hecksher: “The movement from a view of life as essentially simple and orderly to a view of life as complex and ironic is what every individual passes through in becoming mature. But certain epochs encourage this development; in them the paradoxical or dramatic outlook colors the whole intellectual scene...Amid simplicity and order rationalism is born, but rationalism proves inadequate in any period of upheaval. Then equilibrium must be created out of opposites. Such inner peace as men gain must represent a tension between contradictions and uncertainties....A feeling for paradox allows seemingly dissimilar things to exist side by side, their very incongruity suggesting a kind of truth.” - August Hecksher

The Public Happiness, Atheneum Publishers, New York, 1962; p. 102

“One of the most serious charges against Modern architecture is its failure to produce understandable theories about the relationship of one building to another.”

Paul Rudolph, Writings on Architecture. Yale University Press, New Haven 2008

Preface

As culture and technology evolve, how will modern architecture, and specifically works of the avant-garde, fare? This thesis argues that the thoughtful and deliberate adaptation of and addition to a work of modern architecture can be a means to salvage it from the grips of obsolescence and to create something new that could not exist in a singular building conceived in one time.

This thesis addresses the difficulty of adapting and adding to modern architecture of the recent past, which has yet to accrue age value or appreciation by the general public, and is still in the process of being understood within the field of architecture itself. It explores, in particular, the complexities of working with aberrant styles of 'late' modern architecture, which though arguably more valuable because unique and rare, pose an even greater challenge to preservation efforts. Two such movements developed in the post-war period are 'Techno-Futurism' and 'Brutalism,' both of which, in opposition to the ubiquitous International Style, attempted to embrace and expose the increasingly complex and rapidly evolving issues effecting architecture at that time. As architecture today is no more well-equipped to anticipate change and adapt, it would be useful to revisit the explorations of this fleeting era; both in the study of how to adapt works of that era to meet needs of today and of the future, as well as how to anticipate change in contemporary works of architecture.

The avant-garde is inherently bound to the idea of the obsolescence, championing innovation and progress while declaring all that preceded obsolete. Ironically, these works light the very fire that will be their own demise; the avant-garde leaves obsolescence in its wake. Building owners similarly embrace the idea of obsolescence in architecture, capitalizing on the building depreciation tax deduction to maximize profits. In this sense, it is the avant-garde that has become mainstream; the truly radical work of architecture eschews obsolescence by declaring architecture infinitely adaptable.

Introduction

Modern architects have typically taken for granted the notion of permanence in architecture. With the exception of non-secular architecture, its sights set on eternity, all architecture must adapt to survive. Time scales of life today have soared past that of traditional architecture – architectural design must now inherently anticipate change and architects must accept the only permanence is that of change. As Paul Rudolph stated in *Yale Perspecta* in 1961, 'change is the only constant.'

The deed of an architect is to mediate the real and the ideal. This oscillation lies at the heart of the creative process and also the process of evolution. Every architect imposes the ideal onto the real, each with their own recipe, and it is in this confrontation that architecture is born. Some architects see only flat horizons while others accept curves. In evolutionary science, *adaptation* is defined as “the evolutionary process whereby an organism becomes better able to live in its habitat.”ⁱ An *adaptive trait* is “an aspect of the developmental pattern of the organism which enables or enhances the probability of that organism surviving and reproducing.”ⁱⁱ As in evolutionary science, so in architecture. Works of architecture that, due to various factors and forces, are under-performing or have waned in functionality, can be made to function optimally through strategic accenting of strong elements and adapting of weak ones.

This thesis follows a general overview of the development of the concept of obsolescence in architecture through the twentieth century, with a focus on architectural trends of the immediate post-war period, when architects began to respond to the issue of obsolescence. The second part of the thesis examines a selection of works by Paul Rudolph that have waned in functionality and popularity. These works underwent recent campaigns of renovation and addition in the effort of preservation, and the success of each project is assessed. A more thorough assessment is undertaken of the Orange County Government Center in Goshen, NY, a Rudolph building that has suffered technical difficulties and public disfavor since its completion in 1966; the forces and factors surrounding this building and its controversial history are parsed. The findings and assessments inform the development of a design proposal for the adaptation of and addition to the Government Center. Finally, from the case study assessments and design exercise is distilled a design methodology for adapting and adding to works of modern architecture.

I. Modernity and Obsolescence

“Current American Architecture is not a matter of art, but of business. A building must pay or there will be no investor ready...to meet its cost. This is at once the curse and the glory of American Architecture.” Barr Ferree, 1893 AIA National Convention

Disposing of buildings in the service of a perceived greater good is an ancient practice; disposability as a result of changing styles or the obsolescence of technologies housed within, is a relatively recent phenomenon. The disposability of buildings was likely augmented by the development of dynamite in the mid-1800's. For example, one technique for preventing or slowing the spread of fires within cities in that period was the strategic use of dynamite to demolish buildings within a fire's path to create “firebreaks.”ⁱⁱⁱ Dynamite was also used to demolish buildings partially damaged by fire, which were to be replaced out of necessity. Another prominent historical example of large scale demolition of buildings in the effort of city planning is that of Haussmann's renovation of Paris under Napoleon III.

In the early twentieth century, advances in construction technology and industry led to the construction of skyscrapers in New York and Chicago, the structures of which were hybrids of masonry and steel. In 1896, the Gillender family, of tobacco wealth, owned a 6-story office building on the corner of Wall Street and Nassau Street; they decided to replace it with a 300-foot tall tower, capitalizing on a tenfold increase in land value. The Gillenders hurried to build the new tower prior to the enactment of stricter building code that came into effect in 1916, which provides some explanation for the eventual shortcomings of the building. It was designed by Charles I. Berg and Edward H. Clark. Structurally, the building employed a fully wind-braced steel frame with masonry infill. Advertised as fully fireproof and as the most modern tower on the market, the Gillender Building was occupied by financial firms throughout its short lifetime.^{iv}

The Gillender Building cost \$500,000 to construct and attracted attention due to the disproportion of its height and footprint, which commanded a relatively low rentable area; the building was deemed economically obsolete from its inception. The new structure occupied a narrow strip of land measuring twenty-six by seventy-three feet, limiting the possibility of efficient space planning. Unstable soil required the use of caisson foundations, which consumed the underground

space that could otherwise have been occupied by vaults or retail storage; this further reduced the building's value. In 1897, the rentable area of about 30,000 square feet was average for a typical pre-skyscraper building in Manhattan. The odd slenderness was made more evident in 1903, when the new Hanover National Bank Building, located on the same Nassau street block and only marginally taller, dwarfed the Gillender.^v

The Gillender Building was located at the northwest corner of Wall street and Nassau street, directly across from the New York Stock Exchange, on a site that soon became extremely desirable. The land in 1840 was valued at \$55,000 and by 1910 was valued at \$1,250,000. In 1909, after only thirteen years in existence, the building made headlines as the first skyscraper to be marked for destruction. It was sold to J.P. Morgan for a record price of \$822 per square foot of land and was demolished in April–June 1910 to make way for the 41–story Bankers Trust tower at 14 Wall Street. It was the first skyscraper in the city to be demolished and at 17 stories in height, briefly held the title of the tallest building ever demolished intentionally. The press described the demolition as "one of the largest building operations ever undertaken in New York." The granite slabs of the Gillender Building were recycled as tombstones at Greenwood Cemetery in Brooklyn.^{vi}

The Gillender marked the beginning of a trend as early skyscrapers were quickly superseded by taller variations. A 1926 article in the New York Times reported that replaced buildings averaged a life of less than 28 years, indicating that the useful and profitable life of construction in the preceding 55 years had been a little over a third of the probable physical existence, assuming proper maintenance.^{vii} The phenomenon sparked studies on building depreciation such as those done by engineer Reginald Pelham Bolton. His study, 'Building for Profit', was published a year after the Gillender was demolished. Prior to this, the ideas of depreciation and obsolescence existed but, having originated in industry and particularly in the railroad industry to assess plants and equipment, were discussed in terms only of physical condition. Bolton realized that depreciation of buildings was a complex matter effected by a variety of conditions. He examined building typologies in relation to square footage and construction cost, appreciation of land value, physical depreciation of building types, and depreciation by quality of materials as a direct result of lifespan of building materials. Bolton performed an analysis of the Gillender building and labeled it the first example where 'financial decay' was the primary force behind depreciation.

“In these days the durability of building materials has mostly been dropped from the list....in practice it is found that the physical is almost certain to exceed the economic durability of a building” - Reginald Bolton^{viii}

Bolton sought to identify the causes behind obsolescence, tabulated by building type and organized according to rates of change. He “rationalized the chaos of the capitalist built environment in one of its periodic spasms of regeneration.”^{ix} The incident of the Gillender building and those that followed struck fear in the hearts of building owners in the US. The National Building Owner's and Manager's Association, a professional organization for commercial real estate professionals, was founded in 1908. It was dedicated to the needs of a young industry on the brink of extraordinary growth and prosperity. They established a national building code between 1913 and 1916, lobbied against tax increases during WWI and adopted the Standard Method of Floor Measurement. In the roaring 1920's NABOM developed strategies, standards and policies that set essential guidelines for 'managed growth.'^x

In 1909, the same year in which the Supreme Court recognized the legitimacy of depreciation accounting for regulated industries, the concept of depreciation was accepted for the first time in U.S. tax law. The corporate "excise" tax of that year authorized a deduction for depreciation. In the same year, Congress approved and submitted to the states the Sixteenth Amendment to the Constitution, which authorized "taxes on incomes, from whatever sources derived,..." Four years later, the Sixteenth Amendment was ratified, and Section 11 of the Tariff Act of 1913 established a tax on the net income of corporations and individuals. The Tariff Act allowed individuals "a reasonable allowance for the exhaustion, wear and tear of property arising out of its use or employment in the business."

The Chicago-based association for building owners and managers applied scientific methods in determining how to protect members from risk; they autopsied lost Chicago landmarks such as the Tacoma building, which had an inefficient floor layout that proved too restrictive to growth, and Richardson's Marshall Field Wholesale Store, with masonry bearing walls that proved difficult to adapt. In Chicago's loop district, a 30-year life span was assigned to buildings for tax purposes and in the early 1930's the office building lifespan was officially set at 40 years by the Federal government – essentially a government subsidy for private capitalist reinvestment.^{xi} In 1930, NABOM surveyed that, in New York, there were few if any buildings over forty years of age on Lower Broadway near Wall

Street, and practically the entire loop district of Chicago had been rebuilt twice since the 1870 fire, and much of it three and four times over.^{xii}

In the 1930's, European cities were given an 80-year lifespan by Swiss architect Hans Bernouli. East German tenements were deemed obsolete in Socialist society and, in America, urban obsolescence denoted substandard economic and public health performance, quantifiable by appraisal forms. A prominent example is Boston's West End neighborhood, demolished in the late 1950's to make way for urban renewal, where MIT urban planner Frederick Adams essentially "authored the West End's obsolescence." The language of Obsolescence was formed from the combined objective assessment of performance and value and subjective label of blight, which insinuated naturalistic contagion, playing to emotion.^{xiii} Oddly, Boston's West End district was not statistically the city's worst – the Back Bay and North End were equally or more blighted - but both had cultural cache and political clout that the West End, a socially incohesive neighborhood of working class immigrants, lacked. Downtown merchants in the adjacent business district were pushing for the urban renewal project in hopes of gentrification.

Today, there is a nostalgia for the old West End neighborhood. New housing mimics the form of the old and there is an 'Old West End' museum.^{xiv} Ironically, works included in the 1960's urban renewal project, such as Paul Rudolph's Boston Government Center building, are today themselves considered obsolete and ripe for demolition. Abramson claims that this discourse of urban obsolescence was strategically aimed to create the illusion of statistical truth and short architectural lives in the eyes of the law, in order to influence public policy towards a greater tax subsidy for real estate capitalism. He hints that planned obsolescence may have even been a means to end the Great Depression, just as style obsolescence was promoted by industrial designers in the 1930's to stimulate demand for consumer products and increase profits in a cycle that has become integral to American / Western culture.^{xv}

Today, the concept of obsolescence has re-emerged as a tool against the cause of preservation. A recent well-publicized case is that of Prentice Women's Hospital, a nine-story tower, cloverleaf in plan and cantilevered over a rectangular five-story building, designed by Bertrand Goldberg. The hospital is in the 'Brutalist' style, an avant-garde movement of the late 1960's that developed as a reaction to the then-ubiquitous International Style. The tower housed a maternity center with nursing stations located in the central core and patient wards in the four lobes in order to minimize distance

between nurse and patient, maintain eye contact and a provide a high level of comfort. The architect thoughtfully looked for a more humane solution to the cold anonymity of modern hospitals, “with patients gathered in four small groups per floor, each group with a nursing center, to provide better attention for the patient and fewer steps for the nurse and doctor.”^{xvi} The unique shape, with the tower cantilevering off the central core, succeeded in eliminating the need for supports in the lower building, as well as the need for columns in the tower. The innovative structural solution could only be achieved with the use of new computer modeling tools adapted from the aeronautical industry.

Due to limited space, Northwestern University vacated the building in 2011 and opened a new hospital nearby. Preservationists and prominent architects signed a petition to save Prentice but, despite owning a vacant block across the street, Northwestern has begun the process of demolition. Northwestern plans to replace the building with a new medical research facility designed by Perkins + Wills. The fate of Prentice was greatly affected by the election of Rahm Emanuel as mayor of Chicago, and the subsequent re-staffing of the Chicago preservation commission.^{xvii} Various proposals and reports, including a study produced in 2011 by Jacobs Consultancy, Inc.,^{xviii} show plans for adaptation and addition to be significantly lower in cost than those for demolition and replacement. The nail in Prentice's coffin was arguably it's “outdated” style. Ultimately, the myth of inevitable obsolescence in architecture has become embedded in the American public consciousness.

II. Adapting the Aging Avant-Garde – Post-War or 'Late' Modern Architecture

The concept of the “avant-garde”, as understood today, stems in part from Olinde Rodrigues' essay "L'artiste, le savant et l'industriel" ("The artist, the scientist and the industrialist", 1825); Rodrigues called on artists to "serve as [the people's] avantgarde", insisting that "the power of the arts is indeed the most immediate and fastest way" to social, political and economic reform.^{xix}

The post-war period in modern architecture marked a sea change; the “avant-garde of 1967, repeated the “deeds and gestures of those of 1917,”^{xx} in which architects began to critique modernity and undermine the International Style. “The International Style, through its brilliant gestures, created most persuasive images of modern life. But in its forty-year history, now drawing to a close, many architects have come to 'question some of the early dogmas, especially the romanticisms regarding the machine....' They have come to realize, as did Paul Rudolph, that there are 'many ways of organizing a building or, more importantly an environment...The International Style was only the opening chord in a great movement.' These 'principles' of design which once seemed so right are no longer adequate, and all that remains, as Rudolph states it, is the uneasy knowledge that 'change is the only constant.'

//xxi

In the post-World War II development boom, with the emergence of a new throw-away consumer pop culture, the ideas of obsolescence and expendability began to make waves in the field of architecture. This moment also gave birth to the historic preservation movement, following the demolition of Penn Station, and the environmental movement, which branched off into the sustainability movement. The following section will explore two diametrically opposed movements of this era – the 'techno-futurists' and the 'Brutalists.' Both turned from the International Style in a critique of modernism; they also similarly embraced the increasing flux and complexities of their time, but proceeded in opposite directions.

The 'techno-futurists' sought to emphasize the inevitability of change and expose the less glamorous functions of a building; functions were so militantly concealed in works of the International Style.. The movement drew from Buckminster Fuller's highly technological, exposed geometric frames in an attempt to accommodate the rapidly changing programs and daily life patterns of 1960's society. This manifested in radical experimentation with flexible & disposable architecture, such as Archigram's Plug In City, which featured 40-year lifespan infrastructure, inserted 20-year towers and mobile cranes to hoist 3-year bathroom kitchen modules.^{xxii} Other examples of

architects grappling with obsolescence include Ezra Ehrenkrantz's open plan, truss-roofed factory shed – adapted for schools, offices, labs, hospitals – all stacked vertically with services between; Renzo Piano and Richard Roger's Pompidou Center with externalized services; Mies van der Rohe's concept of 'universal space' and submerging of services, as at the Neue Nationalgalerie in Berlin; and Metabolist Kurokawa's Frame and Capsule Megastructures.^{xxiii}

In Britain, state-funded scientific studies of architectural obsolescence were undertaken to increase the efficiency of welfare state services. Richard Llewelyn Davis performed studies on hospital buildings, such as that of Northwick Park Hospital, Britain's largest medical complex. He employed a loose-jointed site plan with an indeterminate architecture of 'demolishable' blocks and growing ends, demountable fire stairs, and removable steel panels for expansion. Taking into account both growth and attrition, the complex could flex with the unpredictable contingencies of obsolescence, grow with order and change with calm.^{xxiv}

Reyner Banham's aesthetics of expendability for the throw-away economy inspired Archigram as well as Cedric Price, whose fun palace for experimental leisure and self-realization embraced obsolescence, unshackled from the past and facing the future. In another project, Price's academic network built amongst industrial ruins simultaneously grew and was demolished, with futuristic hoisted classroom capsules. This was the age of "historicide," of "eating the past," and of "waste makers."^{xxv} As a result of the 1970's energy crisis, the radical experimentation of the 60's, which imagined a much faster rate of change and growth, met with critical antipathy – though some of the ideas re-emerged in the later trend of adaptive reuse.

Another avant-garde of the late 1960's, today known as 'Brutalism,' sought to counter the cold, anonymous, and homogenous rigidity of the International Style, in an effort to evoke "visual delight" and return "vitality and validity" to architecture.^{xxvi} Its name derives from Le Corbusier's 'beton brut,' or raw concrete. Architects associated with this style, including Paul Rudolph, Bertrand Goldberg, and Moshe Safdie, recognized the need for architects to address and embrace the increasing complexity of the time. There was also awareness in the architecture field of the need for flexibility. While the 'Techno-futurists' eschewed permanence, theorists like Robert Venturi maintained a need for permanence that may also have worked to hinder adaptation. "The multifunctioning room is a possibly truer answer to the Modern architect's concern with flexibility. The room with a generic rather than a specific purpose...promotes a perceptual flexibility rather than a physical flexibility, and

permits the toughness and permanence still necessary in our building.”^{xxvii}

“The characteristic of [avant-garde] works is “the new” which will be overcome and made obsolete through the novelty of the next style. But, while that which is merely “stylish” will soon become out-moded, that which is modern preserves a secret tie to the classical. Of course, whatever can survive time has always been considered to be a classic. But the emphatically modern document no longer borrows this power of being a classic from the authority of a past epoch; instead a modern work becomes a classic because it has once been authentically modern.”^{xxviii}

“The avant-garde is in every respect more radical than modernity. Less flexible and tolerant of nuances, it is naturally more dogmatic—both in the sense of self-assertion and, conversely, in the sense of self-destruction. The avant-garde borrows practically all its elements from the modern tradition but at the same time blows them up, exaggerates them, and places them in the most unexpected contexts, often making them almost completely unrecognizable...representatives of the avant-garde consciously turned against the stylistic expectations of the general public.”^{xxix}

In the late 1960's architects courageously and admirably set out to meet the rising complexity of the times. However, while architects set out to solve more problems of higher complexity, they failed to address the fact that the problems themselves would also evolve more quickly. “At the same time that the problems increase in quantity, complexity, and difficulty, they also change faster than before...”^{xxx} While there is much to be learned from these works, the intense focus on critiquing modernism and the International Style and high level of specificity in solving problems of that moment, likely hindered the ability of those works to adapt and evolve with the accelerating change of the times.

Paul Rudolph

Paul Rudolph was one of the most prominent American architects of the post-war era. His work stylistically and chronologically spanned between International Style and Postmodernism. Paul Rudolph was born in 1918 and grew up in Alabama; his father was a Methodist minister. He graduated from Auburn University and Harvard GSD; while enrolled at Harvard he served in the Naval Reserve, designing and building ships. At Harvard he studied under Walter Gropius and was classmates with I.M. Pei and Philip Johnson. Rudolph started out working with a partner in Sarasota, Florida where he designed primarily high-end residential work. Sarasota High School was the most

notable work from this period. As the work gradually gained recognition he was invited to lecture across the country, designed exhibits at the MOMA and, in 1957, became dean of the Yale School of Architecture, where he stayed for 9 years. Some of his notable students include Robert Stern, Norman Foster and Der Scutt.^{xxx} While at Yale he received important commissions including the Umass Dartmouth campus, Jewett Art Center at Wellesley and the Boston Government Center.

His most significant work is widely considered to be the controversial Art and Architecture building at Yale. While initially well-received, the A+A building endured a period of disfavor in the 70's and was victim to acts of vandalism and a suspicious fire. The A+A building recently underwent a thoughtful and successful renovation by Gwathmey Siegel Architects, which will be discussed further in Section V. The popularity of his uniquely dynamic, Brutalist architecture eventually waned, along with the rise of Postmodernism, and by the 1970's he received few commissions in the United States. In the following few decades before his death in 1997, he completed projects in Southeast Asia, including the Bond Centre in Hong Kong. Rudolph spent his last years living at the apartment he designed on Beekman Place in Manhattan.^{xxxii} Rudolph donated the archive of his work to the Library of Congress; an informal conversation with Ford Peatross, director of the architectural drawing archive at the Library of Congress, revealed that Rudolph chose this as the site for his archive upon visiting an exhibit that included drawings by Borromini.

III. Orange County Government Center

Intended to be both functional and expressive, the Orange County Government Center building has lost both its functionality and expressive qualities for all but those in the architectural community and their sympathizers; as a result of its perceived loss of value it is repeatedly threatened with demolition. The building has now become a quintessential example of so-called 'obsolete' Brutalist architecture. In the late 1960's, Brutalism was a preferred style for civic buildings in an attempt to reassert strength and express monumentality. As perceptions have changed, the building is now viewed by the politically conservative local constituency as an incomprehensible, non-functional, overbearing and brutal alien. With its myriad technical issues and highly complex form, it now represents the negative qualities of government and bureaucracy – mystifyingly opaque and confusing, intrusive and unwanted, bulky and dysfunctional. The architecturally avant-garde government center acts as a counterpoint to the sea of 19th century buildings in the Main Street area of its town. It is fittingly located on the outskirts of the town center but is still too close for comfort and too often used to be easily ignored. While vilified from within the local community the building is admired from without. It is viewed by the global architectural community, those who have been educated to read its language, and the preservation community that can foresee the implications of its loss, as a unique, dynamic and valuable work of architecture.

History

In 1963, the Board of Supervisors for Orange County in Upstate New York sought a bold, unique design for a new government building that would reflect their progressive vision. The site was to be located in the small village of Goshen in upstate New York, the population of which is currently approximately 13,000. Of eight proposals submitted to the county, Paul Rudolph's was chosen and he began work with Peter Barbone, a local architect, in 1963, while acting dean at the Yale School of Architecture.^{xxxiii} In 1964, according to a letter to Paul Rudolph from Orange County, the scope of the project was still very much in flux; there followed extensive correspondence between various government agencies in Orange County and Rudolph's office.^{xxxiv} County representatives were hesitant of Rudolph's design stating "there has been no real effort by the architects to confer with it relative to its suggestions...We note with disappointment that the proposed building is planned as a three-story building, rather than a complex of buildings as we recommended...the plan furnished to

us...falls far short of the required needs for complete Court facilities."^{xxxv} Due to the continual changes to the scope and program, as well as budgetary issues, a design was not submitted until 1966 and the building was not opened until October of 1970.

Program Changes

Originally, like most New York counties, Orange County was governed by a 37-member Board of Supervisors. In 1968, two years after the government center opened, the county adopted a new charter that changed the structure of the government by creating a legislature and county executive. As a result of this program change, Rudolph's design underwent reconfiguration of interior spaces during and after construction. "Even before the county moved in, a change in the form of government necessitated some radical changes in design. In order to make space for the executive's office, a position that had not existed under the board of supervisors form of government, partitions were put in halving the space allocated for the county planning department. Now the planners are pinched for room."^{xxxvi}

An article in the local newspaper noted that county officials were considering an addition or entire new building.^{xxxvii} The article claims that the previous board of supervisors underestimated the rapid growth of the county government. "We are running out of space because we are providing more and more services at the county level...with President Nixon's new federalism we can expect federal government will return even more services to the counties." From 1966 to 1973 the number of county employees increased from 600 to 1500. Today, Orange County is governed by the same charter calling for an elected county executive and a 21 member county legislature elected from 21 single member districts.^{xxxviii}

As early as 1970, Paul Rudolph's office began receiving letters from the O.C. Planning Commission regarding the need for expansion. "Planning Dept. claims they are crowded and have some ideas including expanding into hall...some wild ideas are being suggested...get rid of pine trees and close in plaza."^{xxxix} In a note from Rudolph's Office^{xl}, responding to the question "Can building be enlarged upward?" he gave the following three options: "1. Yes, probably but with different kind of structure of lighter materials. Natural light may suffer. 2. A separate but attached building could be connected to North-South-East or West sides 3. A lean-to could be added to windowless sides (east & west) but all this would depend on space requirements & proximity with

existing facilities.”^{xli}

Critical Reception

The Orange County Government Center design was controversial from its unveiling in 1966. A local newspaper stated that Rudolph's design “displays courage and vision.” Rudolph “approached the task from a functional position, designing the center from its interior.” “The structure would be distinctly modern in exterior appearance, in contrast to the many older designs of other buildings in the community. However, as architect Paul Rudolph explained, other Goshen buildings vary widely in style so it would have been difficult to fashion a new building design which would not have differed from other Goshen structures.”^{xlii} Orange County expected the building to “accommodate the county's future needs, possibly for as much as 15 years” however noting that “growth has been accelerating in Orange County in recent years and the planning experts now forecast a great increase in this acceleration during the next decade.”^{xliii}

“Reactions in Goshen to plans for the proposed county building ranged Monday from “I like it” to “Let's wait and see” to “It's horrible.” A county legislator said that “the people of Goshen should not necessarily insist on a colonial style building because modern architecture can be beautiful, too.” A member of the planning board said the building will “disturb the whole future and planning of Goshen. It stands out like a sore thumb.” He added it would upset the “move to make Goshen a national landmark.”^{xliv} According to another article in the Times Herald Record, “although a few were obviously surprised at its modernistic exterior, the Orange County Board of Supervisors Friday appeared to be generally satisfied with architect Paul Rudolph's concept of the proposed \$4.6 million county office-courthouse building.” There must have been a general consensus of faith that the radical design was revolutionary, would become iconic and gain favor over time. Another county supervisor said “the design for the county building is “ultra” but observed that “I'll probably learn to enjoy it in 10 years.”^{xlv}

Architectural Description

The three separate but connected wings of the building are assembled in a 'U'-shape around an internal, elevated courtyard. The three wings read as a singular object, not raised above but set apart, with a significant setback from the surrounding context. The building was placed far back from the

streets to preserve the greatest number of trees.^{xlvi} A natural ravine runs along the western length of the site, countered by a landscaped promenade area along the eastern sidewalk (Main Street). The Government Center is designed to be read differently from each direction. The south and east elevations are primary; they are scaled and articulated to be read at 40 mph, by cars approaching from the main highway and Main Street area. From this approach the building's scale evokes monumentality, power and frozen motion.

The emphatic north-south axiality, an effect of the structural system, gives the building the appearance of dynamically exploding in two directions simultaneously; the judicial wing to the north (Div. 3) and legislative toward the south (Div. 1), while the central wing (Div. 2) anchors both in a state of constant tension. The massive, undulating forms of the north and south facades cantilever outward and are supported sparingly at the outermost edges with relatively delicate columns, anticipating billowing expansion. While the three-story exterior perimeter of the building is intentionally imposing in scale, the site slopes up towards the center to create an intimate two-story courtyard where the government programs meet and face one other. The elevated courtyard was intended to “add to the monumentality and appearance of the county center.”^{xlvii} It is articulated at a human scale and was contoured with cascading steps, since removed, to host events and imply a sense of fluid connection between buildings and programs.

The interior layout of each of the three wings typically comprises a grand entrance area, which faces the shared courtyard and is ringed by private offices or courtrooms. Rudolph sought to emulate Mies' “implied” or “universal” space through the interplay of massive volumes. The volumes shift against one another while exploding upwards and out, resulting in interpenetration of spaces, as well as allowing natural light into every interior space. He aimed for an interior transparency and a sense of flow between grand, formal shared spaces and private, functional spaces; possibly representing an ideal functioning of government.

Structural & Mechanical Systems

The structural engineer for the project was Lev Zetlin Associates, Inc. The wall system is composed of poured concrete faced on either side with exposed “split-rib” or “corduroy” concrete block. The structural system consists of a North-South oriented structural grid of 5-foot wide beams at 18-feet on center spanning 40 to 50 feet, which run uniformly through all three wings of the building,

creating a strong axiality; the axial structural system implies expansion on the exterior while stitching spaces together on the interior. The beams frame 6-8" thick slabs and span between adjacent columns of various elevations, with slabs changing direction up to four times. The exposed concrete was formed with 2-inch tongue-and-groove form boards for slabs and plastic-coated plywood for beam sides and soffits. Mechanical systems are tucked beneath the beams and feed into rooftop penthouses and a mechanical hub located in Division 2.^{xlviii}

Program and Circulation

The original program layout included publicly-accessed departments, such as passports and DMV, on the entry floor of Division 1; administrative offices were located above and records below; Large courts and associated departments were located in Division 3 and smaller adult and juvenile courts in Division 2; offices were located above and mechanical rooms below. The largest courtroom seats 125 spectators and the smallest 24. Courtrooms are surrounded by judges' chambers and other legal offices.^{xlix} Each building has one main entry and two secondary entrances. Divisions 1 and 3 each feature an entry foyer followed by a grand double-height public atrium lined with Rudolph's signature benches and red carpet. Circulation generally occurs along the perimeter of the atrium, with more private, subdivided office areas beyond the perimeter. The original interiors were organized in concentric arcs that reverberate in a centrifugal motion out from the center of the courtyard towards the outer edges of the buildings, each with a higher degree of intimacy of scale and specificity. Division 2 is organized in a differently, with a central circulation corridor running North-South and program to either side.

Rudolph on the Orange County Government Center

"Paul Rudolph considers this building his most important current project in terms of the development of his design ideas. 'I am working with Mies van der Rohe's concept of implied space.' The plans, sections and isometrics reveal a building of spatial complexity, assembled within a structural and mechanical framework of simplicity. The column spacing is regular and both the air-conditioning ducts and light fixtures are in the structural module, tucked under the beams. Concrete slabs frame the short spans which will be free of the clutter of mechanical equipment. Great clerestories carefully oriented to the south or north provide natural light for interior spaces. From the

exterior one is able to sense the forms of the rooms within. Its many-faceted aspect breaks down the scale and brings the immense building into a better relationship with the smaller structures which surround it.”¹

Rudolph “explained that the exterior reflected on the outside the functions that are inside. He said the design is representative of modern building techniques and was developed from the inside to the outside.”^{li} “Scale had an important part here. The surrounding buildings are residential – comparatively small and placed on big lots. The houses have lines broken by porches, dormer windows, bays and balconies. The proposed county center, therefore, has many broken lines and is reduced to three connected buildings, all lower than the house on the other side of Main Street.” Rudolph did not “see fit to set down one great big ball” in a residential area” and predicted that “the simple lines would be as good now as 50 years from now.” He wanted to avoid “gimmicks and faddisms of the moment.”^{lii} “In keeping with the scale and character of the existing buildings in the village, the height of the county center has been restricted to three stories, and in respect to the many styles of architecture found in the neighborhood which are unified by a delicacy of scale, the bulk of the building has been subdivided into many small masses.”^{liii}

Technical Issues

The building has experienced technical issues since its completion but none are unique to the building or especially extreme. The complex, highly variegated forms of the building lead to a larger quantity of vulnerable areas but in general the technical problems are not uncommon in buildings of the 20th century. The 'Physical Condition Assessment of the Orange County Government Center Report – Orange County Department of Public Works^{liv} produced by designLAB architects and other consultants in May of 2013 outlines the condition of the building as follows:

Water Infiltration

The building suffered water infiltration soon after its completion following a severe storm in 1970 and systemic leaking in decades since. Over eighty separate flat roofs, and miles of potentially faulty or inevitably vulnerable flashing conditions, proved to be problematic. The report points to “cold joints” between roof planes and walls as a potential source of infiltration. However, a roof condition detail in the original documents shows no joint in the poured-in-place structure. Roof

membrane and flashing options were limited at the time of construction and regular maintenance was likely not performed. The roofs were entirely replaced in the 1980's, when the original membrane was at the end of its lifespan, with a single-ply membrane. According to the condition report, the flashing installation at that time was poor quality and did not provide adequate protection. The existing roofing assembly is today long past its service life and requires replacement. The ideal system would consist of a multi-ply liquid applied membrane system atop a pourable fill sloped to the drains with liquid applied and metal flashing installed at adequate height with proper detailing. The CMU-faced walls require repointing, which is particularly difficult due to the "split-rib" profile, but the masonry walls are not considered to be a primary source of water infiltration.

Handicap Accessibility

Rudolph sought to create 'implied space,' a concept derived from Mies van der Rohe's idea of 'universal' space. His 'implied space' however, was not horizontal like that of Mies, but three-dimensional, akin to that of Baroque churches. Rudolph employed multiple, subtle changes in floor level, which today pose an impediment for handicap accessibility. The original entry to the building was via a monumental stair that tucked beneath the entrance canopy; that stair has since been ramped over with concrete. The courtyard was originally contoured with cascading steps, going from an elevation of 4'-0" above grade at the base to various levels at 7'-0", 11'-0" and 13'-0". The exterior steps have since been covered with earth. Handicap access on the interior has been achieved with the less elegant solution of installing multiple wheelchair lifts.

Flooding, Equipment Damage, Mold and Fungus

The site is bisected by a drainage canal that floods periodically. The report found that the site drainage system overall suffered from lapsed maintenance and required repair. The site flooded during Hurricane Sandy in 2012, damaging mechanical and electrical equipment housed in the most vulnerable location, on the lower level of Division 2.

Interior Modifications

By 1972, changes were being made to the interior of the building – some in response to program changes and others making the highly designed modern interiors more hospitable for employees. Due to inadequate acoustics in the legislative chamber microphones were added. Desk

lighting was corrected by “sawing off the standards and lowering each light so that legislators could see their colleagues across the room.” The large south-facing windows allowed too much light and were “covered with brown paper” with a later addition of “permanent installation over those high and useless windows.” Landscape maintenance and snow-plowing were difficult due to the “long and hazardous piers that pop out at every corner and in between to make an unavoidable obstacle course of the only passage through the grounds.” As a result, some of the piers have since been removed.^{lv}

Recent History and Current Condition

The most detrimental forces against the building have been public disfavor and subsequent neglect of maintenance. The Orange County Government Center is one of the many “government buildings that received considerable public and professional acclaim at the time of their completion but were never fully embraced by their respective localities and have regularly been threatened with severe alterations or even demolition.”^{lvi} The last county executive, Edward Diana, was the primary force behind the push for demolition. As a result of decades of piecemeal and stop-gap modifications & repairs, the push for demolition and subsequent neglect – the building was put on the World Monuments Fund watch list in 2012. A grassroots campaign was started to save the building and The Paul Rudolph Foundation has been involved.^{lvii}

IV. Architectural Analysis

Rudolph was greatly influenced by Le Corbusier and Frank Lloyd Wright and appreciated certain principles of Gropius and Mies van der Rohe, such as 'universal' space. He was a pragmatic thinker who aimed not only to solve problems but for his architecture to honestly and proudly exhibit and integrate within the design the struggle of tackling problems. "His purpose was not to build modish or faddish buildings but structures which met and fulfilled a need."^{lviii} This method was in direct opposition to that of the International Style, which separated and concealed the complexity of reality. Paul Rudolph has clearly stated the implications of Mies' point of view: "All problems can never be solved....Indeed it is a characteristic of the twentieth century that architects are highly selective in determining which problems they want to solve. Mies, for instance, makes wonderful buildings only because he ignores many aspects of a building. If he solved more problems, his buildings would be far less potent."^{lix}

This point is made clear in Spanish architect Andre Jaque's installation at the Barcelona Pavilion, in which he "took all the cleaning supplies and other mundane treasures out of the storage, exposing the less-than-picturesque details that make a building run."^{lx} "The installation proposes a reconciliation of these separate worlds. Twenty-three interventions pair the "ordinary" with the "sublime..."^{lxi} Mies' work has not been altered much – both because many are protected but also because "instances of alteration that do exist stand out like black flies on the white marble wall." Restoration and addition projects are in the works for the Neue Nationalgalerie in Berlin and Martin Luther King Library in Washington, D.C.

Rudolph often cited his distaste for the International Style and his architectural principles are generally in direct opposition, with the exception of 'implied space.' However, the 'International Style' has proliferated globally and continues to do so. In his piece 'On Aggregators,' David Joselit posits that "the history of modernism...proceeded according to a dialectical opposition between avant-garde innovation and the enunciations of international styles." He cites the importance of the avant-garde for innovation while simultaneously defending the International Style, for its simultaneous finitude and elasticity, and for its ability to endure, spreading so thinly and widely across cultures. It may provide some hints in the effort to achieve the aesthetic and functional longevity that eluded other modernist styles, such as Brutalism.

Paul Rudolph and the International Style

Mies lives in the ideal and Rudolph in the real. Rudolph defines and limits spaces physically with a high level of specificity to program, while Mies's architecture is programmatically neutral. The uninhibited flow of sunlight through a Miesian plane of glass is, to the general public, preferred to Rudolph's attempts to control and direct, or even withhold, sunlight. Rudolph's 'implied space' is created with level changes, low walls and built-in furniture while Mies' with architectural elements, such as wall and column. Rudolph's works evoke physical permanence through material solidity and bulk, but have ironically failed to endure. The International Style evokes a fragile materiality, even ephemerality, but in its anonymity has become ubiquitous and eternal. The Government Center expresses dynamism, a frozen moment of an accelerating force; this is arguably more static than Mies' work, which is apparently static but speaks not to a moment but to eternity. Indeterminacy and sparsity lead to aesthetic longevity; the lesson is not "less is more" but "less goes further" or "less lasts."

Rudolph and Mies - Columns



Column at O.C.G.C.



Column at I.I.T.

V. Case Studies – Adapting and Adding to Rudolph

Yale A+A and the Loria Center by Gwathmey Siegel & Associates Architects

The Yale Art + Architecture building was designed by Rudolph while he was dean of the architecture school and is arguably his masterpiece. It suffered a period of disfavor during the reign of Post-Modernism, and was severely damaged in a mysterious fire in 1970. Now called Rudolph Hall, it was renovated and expanded in 2008 by Gwathmey Siegel & Associates Architects. The addition is 87,000 square feet and sheathed in limestone and zinc. “The renovation and restoration of Rudolph's Art + Architecture building has been among the most meaningful projects of my career. It is a building of great intricacy, often breathtaking beauty, and major historical importance, and I am proud to have been entrusted with its revitalization, as well as to have created a new adjacent building that at once expands upon Rudolph's vision and adds to the architectural collage of the Yale campus.”^{lxii}

The addition, called the Loria Center, “features a wide array of teaching and lecture rooms as well as office space and gathering areas that will enhance the already strong connections between students and faculty. The building also includes a new street level cafe and outdoor terraces with previously unattainable views of Rudolph Hall and the New Haven skyline.”^{lxiii} Rudolph Hall and the Loria Center are stitched together on the ground floor with the new Haas Family Arts Library, which will “become the physical and intellectual center for pursuit of research, teaching and learning in the arts at Yale.” The library features a two-story atrium that marks and reveals the seam between old and new. Gwathmey artfully solved the issue of lack of handicap accessibility due to the multiple floor levels and irregular floor to floor heights. In the renovation, Rudolph's signature conversation pits were leveled in such a way that the design revealed the act.

At the seam where the new building meets the old, the front circulation core, the issue of irregular floor to floor heights is resolved with ramps. Mechanical, plumbing and electrical systems were replaced feeding to a new service and bathroom core at the rear of the addition. The Gwathmey project elegantly solves many problems of the original Rudolph building while also doubling the square footage of the complex. The one arguable weakness of the project is the form and materiality of the addition's facade, though a more suitable; being a very difficult task, a more appropriate treatment is hard to imagine. “Charles Gwathmey's design, carried out with both great sensitivity and a deep knowledge of Rudolph's aesthetic intentions, provides a valuable example to others

who plan to restore Modernist structures, a subject of increasing importance today.”

Robert A.M. Stern, current Dean of Yale School of Architecture.

Orange County Courthouse by E,E&K

In the late 1990's, the original Rudolph courtrooms at the Orange County Government Center were deemed unfit and an addition was commissioned, designed by E,E&K Architects, since acquired by Perkins Eastman. The architects were primarily concerned with creating a design appropriate to the local context that would appease the local community.^{lxiv} The materials, red 'town brick' with glass and aluminum curtain walls, were chosen to match the local context. The addition respects the original government center by engaging minimally, connecting only at the northwest corner intersection of Divisions 2 and 3. The project did not include any scope within the Rudolph building. While the design succeeds in preserving the original buildings, the lack of engagement and reorientation of the main entrance leaves the Rudolph building vulnerable.

University of Massachusetts, Dartmouth by designLAB architects, 2000's

An addition to and renovation of the UMass Dartmouth library was undertaken by designLAB architects in the late 2000's. The original Rudolph interiors were gut renovated and portions of the building exterior were wrapped with a glass curtain wall to create open seating areas for students. The large swaths of flat glass, reminiscent of the International Style Rudolph so disliked, neutralize the dynamism of the exterior forms and allow uninhibited entry of direct sunlight.

Orange County Government Center (Preliminary Proposal) by designLAB architects

In 2012, designLAB architects, the firm that performed the renovation of the library at UMass Dartmouth, were asked to prepare a proposal for an expansion of the Orange County Government Center. The design was presented to the members of the local government and tentatively approved in early 2014. The program of the current approved proposal includes: offices for the Executive and District Attorney, Human Resources Department, a Community Center and a public cafe. The addition would total approximately 60,000 square feet for a total increase of 30,000 square feet. The total cost is projected at \$67 million. The proposal calls for demolition of Division 2, which suffered the most storm damage in late 2012, has undergone the most interior reconfiguration and does not feature a dramatic public atrium as do the other two wings. Divisions 1 and 3 are to be gut renovated

and the interiors reconfigured. The addition in place of the demolished Division 2 would be clad with glass curtain walls, which in one scheme are shown to be wrapping around the south elevation of existing Division 3, as was done at the UMass library.^{lxv}

A new monumental stair would lead up to a new entrance on the west facade of the addition. This scheme would reorient the entire site to the back, leaving Rudolph's grand entrance unused and vulnerable to further deterioration and/or future alterations. The glass curtain wall wrapping the main south elevation of Division 1 neutralizes the formal dynamism and vitality that is the signature of Rudolph's work.

The Gwathmey Siegel project at Yale successfully and elegantly solves technical issues on the interior of the Rudolph building, with minimal demolition and reconfiguration, while also doubling the square footage. The addition to the Orange County Courthouse also intervenes minimally while satisfying only the need for expansion. The designLAB project at UMass Dartmouth, and their proposal for the Orange County Government Center, are both aggressive schemes that prioritize the aesthetic issues and public disfavor. None of the four designs studied addresses the highly changeable nature of the program, as government functions frequently restructure and expand or contract. Such a program requires internal flexibility to allow future reconfiguration of interior spaces, as well as external flexibility in anticipation of the need for future expansion.

VI. Developing a Counter-Language for Adapting and Adding to Modern Architecture

When the functionality of a work of architecture wanes, it is helpful to identify the contributing forces and factors. There are external, unavoidable forces: 1. social & cultural change, changing styles and 2. technological innovation, obsolescence of systems upon which the building depends. There are also internal factors and intrinsic limitations of the architecture. Program changes require reconfiguration and expansion. In the example of Brutalist Architecture, elements characteristic of the style itself prevent the buildings evolution, including: low floor-to-floor heights, overly-determined, highly specific spatial configuration in plan, multiple, subtle and irregular changes in floor level, and massive concrete construction.

Once the factors effecting a particular building have been identified, a counter-language can be developed. Each limitation should be met with an equal and opposite element that allows more flexibility. Limitations should also be dealt with in a way that makes them transparent and integral to any design intervention. Adaptations and additions should, with an appropriateness that respects the existing architecture as much as possible, be conscious of the need for flexibility and should anticipate future reconfigurations and expansions. The intervention should selectively highlight strengths, transparently strengthen weaknesses, while embracing and transforming limitations of the existing building.

VII. Distilling and Implementing a Design Methodology for Adapting and Adding to Modern Architecture

In his *Six Determinants of Architectural Form*,^{lxvi} Paul Rudolph outlines the buildings' environment or site context, functional aspects, region of site, material, "peculiar psychological demands of building or place," and the spirit of the times, as the six determining factors in the creation of a work of architecture. The Orange County Government Center certainly expresses a spirit of its time, though its success in meeting the remaining five factors is questionable in hindsight.

Following Rudolph's outline, this thesis proposes Six Determinants for Adapting and Adding to an existing work of Modern Architecture as follows:

1. Flexibility – Embrace impermanence; Encourage changeability.
2. Transparency - Emphasize limitations and make solutions integral to the design.
3. Contrast - Meet inflexibility with flexibility and vice versa; ephemeral with eternal, etc.
4. Balance - Between specificity and vagueness; completion and openness.
5. Evolution – Selectively strengthen weakness, highlight strengths and transform limitations.
6. Respect – Existing tectonics, logic and language; Respond appropriately.

In the following design proposal it is assumed that the Government Center will retain its original program. The design adopts the new program and square footage outlined by the current proposal by designLAB architects.

Adapting Rudolph

Highlight strengths, strengthen weaknesses and embrace / transform limitations, while respecting existing tectonics and language.

Responding to Intrinsic Limitations

The design proposal focuses on rehabilitation of the existing courtyard, which was originally intended to be a gathering place for events and was contoured with dramatic spilling steps. This space holds great potential to revitalize the Rudolph building and serve once again as the hub of activity on the site. The courtyard steps, now buried beneath earthen mounds, are replaced with a series of large-scale, grand ramps, in an attempt to not only solve but embrace the issue of handicap accessibility to the multiple floor levels. Some existing steps are incorporated in the new design, signifying an important original element that is now impeding optimal functionality. Rudolph believed changes in floor level and ceiling height had a profound effect on the psychology of the inhabitant and this is respected in the design. The courtyard is enclosed with a glass roof – concave in form to shelter portions of the Rudolph buildings from weather and conspicuously, symbolically direct water to a collection area away from the buildings. A glass curtain wall encloses the sides, tucked behind the main entrance canopy. The courtyard is reinvigorated with new paving, greenery and seating for the cafe.

The design intervention both acknowledges and encourages inevitable future needs for reconfiguration and renovation; it matches the inflexibility of Rudolph's work with an equal and opposite level of flexibility, while working within the existing design logic. The structure for the courtyard is composed of minimal steel columns set along the existing 18-foot structural grid of the buildings. Each column is encased in concrete at the bottom and painted exposed steel at the top, symbolizing mediation, and the transition from Rudolph's massive concrete to the lighter, Miesian addition. The columns support steel trusses angled down towards the center of the courtyard to direct rainwater. Columns are oriented, employing Rudolph's method, to imply the flow of space. A wide ramp runs from the existing grand entrance canopy, westward up to the new entrance to Division 2 and through to the addition. This ramp echoes the long, wide entrance ramp (originally a grand stair) that feeds beneath the existing entrance canopy to the Division 3 entrance.

Aside from the columns and ramp, all added elements are flexible or changeable. The 18-foot-wide glass panels that compose the roof are retractable. Rudolph employed clerestories throughout the building because he preferred controlled, indirect natural light to the unencumbered, direct light found in Miesian buildings. The glass roof panel is to be equipped with shading devices.

The adaptation should respect and work within the existing tectonics and design logic of the Rudolph work. Rudolph subtly employed proportion and orientation of columns along the 18-foot grid to direct or 'imply' space. The majority of the columns are rectangular and oriented along the North-South axis, emphasizing the strong axuality of the building. However, in select locations, the columns are oriented along the East-West axis, implying a static interior space. These aberrations are found in the large courtrooms of Division 3, as well as the former small courtrooms of Division 2. The courtrooms of Division 2 no longer exist – at some point in the buildings history the partitions were removed and the spaces converted to small offices. The proposed design capitalizes on this aberration, siting the entrance to the addition within this bay; it employs Rudolph's method of using column orientation to imply movement of space. A new East-West axis is created, along which the addition and future expansion can flow.

As the addition will accommodate the need for expansion, the renovation of the Rudolph buildings can be minimal. A ramp is introduced to the northeast corner of Division 1, providing access from the courtyard to the elevator of the building, eliminating the need for excessive wheelchair lifts. Division 2 contains few elements original to the Rudolph design as it was reconfigured to accommodate more offices. Any non-original elements are removed from Division 2. All new architectural elements introduced to the interior of Division 2 are flexible and allow for quick reconfigurations of the space. Division 2 houses public programs of cafe and community center.

Responding to External Forces:

Rudolph's work was aesthetically & stylistically out-of-fashion soon after completion. It is extreme in it's dynamism, intensity, specificity and massiveness. In order to create balance and tension, the proposed intervention swings to the opposite pole; the language and forms express stillness, calmness, openness and lightness.

Many, if not all, of the technical failures of the Rudolph building resulted from deferred, piecemeal maintenance. Well-planned, timely and complete repair and replacement campaigns,

particularly of the roofing, flashing and site drainage systems, would greatly improve and extend the buildings functionality. Similarly, had mechanical, electrical and plumbing systems should be replaced at end of service life. The design proposes moving mechanical and other equipment from the bottom floor of Division 2 to a new mechanical hub on the third floor of the building, tying into the mechanical spine of the addition. Replacement of the site drainage system may prevent flooding of the site but relocation of equipment is also essential.

Adding

Highlight strengths, strengthen weaknesses and embrace / transform failures, while respecting and responding to existing tectonics and language.

Responding to Intrinsic Limitations

The Orange County Government Center, was always too small for program requirements; as program changed during the design phase, the spatial configuration in plan never functioned optimally. The highly specific plan configuration, with a relatively narrow eighteen-foot wide structural grid, and use of concrete interior partitions, are all intrinsic elements that prevented the building from evolving alongside its changing programmatic needs. The addition accommodates the need for expansion and anticipates the need for future expansion. The initial program will be government offices but the design will allow for reconfiguration and program and office structure evolve. The interior of the addition matches the inflexibility of the Rudolph buildings with an equal and opposite flexibility.

As in the adaptation, where Rudolph's work is dynamic, formally complex, specific and massive, the addition is correspondingly sedate, simple, open-ended and light. The addition grows westward from Division 2, along the new East-West axis established within the X structural bay of Division 2. It bridges across the existing ravine to a large empty site, anticipating need for future expansion. The addition is raised on pilotis about 15-feet above grade, due to the tendency of the site to flood. The addition consists of a central circulation spine, within the X structural bay, with a mechanical spine above that runs from the mechanical equipment hub above Division 2 and supplies the offices below. The offices are set along the North and South sides of the spine, growing towards the new site to the Southwest in anticipation of future expansion.

The addition is anchored on the Southwest quadrant with another entrance, the main entry for the District Attorney offices and County Executive offices. The entry echoes the existing long and wide entrance canopy and ramp of the Rudolph design. These offices have a separate parking area in the Southwest quadrant.

The addition extends the architectural language used in the design of the renovation of the courtyard and Division 2. Columns are articulated as those supporting the glass courtyard roof, their orientations varied to imply flow of space. As the addition marches west, the structural system initially follows the 18-foot grid of the Rudolph design, then progresses to wider bays requiring longer spans.

As in the courtyard, the addition is flexible where Rudolph is inflexible. South and West facades would be detailed so as to allow for future removal and 'plug-in' additions. The designs of these facades would be articulated in such a way as to make this explicit.

Responding to External Forces

Rudolph's aesthetic is today out of fashion and public favor. The formal language to use for the addition's facade is the most difficult problem faced in this a design exercise. The Gwathmey-Siegel addition at the Yale A+A building attempts to match the strength or level of interest of the Rudolph building while remaining somehow deferent. It is the least successful aspect of the project but an admirable attempt. Contrastedly, the designLAB project at Umass Dartmouth wraps the Rudolph building with a flat, glass curtain wall. This provides a pleasant and delightful visual contrast but neutralizes and thereby weakens the forceful, dynamism of Rudolph's work. It is a compromise, an easy contemporary solution that is successful in appeasing the general public. Their proposal for the Orange County Government Center, which again wraps the most dynamic facade with a flat glass curtain wall, would likely have a similar effect and reception.

In the course of this design exercise both solutions were considered – to abut Rudolph at a comparable level of dynamism or to swing to a pole opposite Rudolph with an extreme absence of dynamism. A third solution, a facade design that would surpass Rudolph with a more complex, violently dynamic formal language. This, though, an exciting prospect, would not be realistic, feasible or appropriate to the local context and program. Ultimately, while decidedly inappropriate when used to wrap a facade as dynamic as that of Rudolph, this design proposes that the sedate, Miesian glass

curtain wall would be an elegant formal solution for the facade of the adjacent, juxtaposed addition. While Rudolph himself had a strong distaste for such architecture, his commitment to problem-solving might allow him to follow the logic behind the design decision.

The use of highly contrasting materials and language provides a strong counter-balance to Rudolph's work. As Rudolph's work accrues age-value, it will hopefully be tolerated and even appreciated by the general public. Should massive, concrete, expressive architecture return to fashion, the Rudolph building will augment the contrasting addition.

A mechanical room runs atop and along the circulation spine of the addition allowing for ease of access to the entire length of the MEP systems, for inevitable repair and replacement. It is lined with clerestories providing controlled, indirect light to the offices beneath.

Conclusion

Architects must be cognizant that certain programs are more prone to rapid changes and will need to expand and change more frequently, for example healthcare, government, education, museums, etc.; the level of flexibility of the architecture should reflect the anticipated evolution of the program. The more present-day problems an architectural work attempts to solve, the more resistant it will be to evolution, as problems themselves multiply and evolve. Modern architecture was born alongside the industrial revolution, the factory aesthetic and war-fueled technological booms. As architecture becomes increasingly entwined with and dependent upon technologies, systems and materials that have shorter lifespans, buildings themselves are in danger of obsolescence.

Works of the avant-garde make emphatic statements in hopes of inciting change, participating in a new, aberrant conversation and promoting better living through progress. Ironically, these works light the very fire that will be their own demise; the avant-garde is the force that leaves obsolescence in its wake. As culture evolves, works of the former avant-garde are left moored to their moment and subsequently have a shorter shelf-life than works of the mainstream. However, the statements of the avant-garde, though anchored to a specific moment in time, do not lose meaning in entirety. To the contrary, culture cycles in an ever-expanding spiral, with repetitions and differences; it oscillates between affinities to the ideal and to the real. The critiques and architectural principles championed by late 1960's modern architecture have relevance today and will be relevant, though in a different

sense, again in the future.

While modern architecture continues and will continue to hold value and meaning for our society, myriad forces are working against its durability. We must therefore carry it into the future, not as a relic but with renewed functionality and significance. The solution can be found in learning to appropriately and efficiently adapt and add to modern architecture as needs change and technologies improve. This should be done in such a way that the conflicts met in the struggle to contemporize modernist works not be hidden but celebrated and made integral to the design. As a result, an entirely new architecture can be created that is richer in meaning and succeeds in meeting the increasing complexity and accelerating flux of contemporary life. A truly radical work side-steps the cycle of obsolescence, preserving architecture by declaring it infinitely adaptable.

- i Dobzhansky, T.; Hecht, MK; Steere, WC (1968). "On some fundamental concepts of evolutionary biology". *Evolutionary biology volume 2* (1st ed.). New York: Appleton-Century-Crofts. pp. 1–34.
- ii Dobzhansky, T. (1956). "Genetics of natural populations XXV. Genetic changes in populations of *Drosophila pseudoobscura* and *Drosophila persimilis* in some locations in California". *Evolution* **10** (1): 82–92.
- iii http://mceer.buffalo.edu/1906_Earthquake/city_destroyed/city-burns.asp
- iv <http://www.nyc-architecture.com/GON/GON013.htm>
- v "New Office Building for Wall Street. Sixteen-Story Structure, Costing \$1,500,000, to Go Up on the Stevens Site" (PDF). *The New York Times*, July 9, 1909. July 7, 1909.
- vi "Skyscraper Will Replace A Twenty-Story Structure: Gillender Building". *The Christian Science Monitor*; May 5, 1910
- vii "Skyscraper Will Replace A Twenty-Story Structure: Gillender Building". *The Christian Science Monitor*; May 5, 1910
 -"Breaking Records In House-Wrecking". *New York Times*, June 3, 1910
 -"Engineering Achievement". *Los Angeles Times*, June 6, 1897
- viii "Wall Street's "Big Little Buildings". *New York Times*, August 24, 1930
 -"A Skyscrapers Life". *New York Times*, Nov. 21, 1926
- ix Daniel Abramson, "Boston's West End," in *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century*, ed. Aggregate. (Pittsburgh: University of Pittsburgh Press, 2012)
- x Reginald Pelham Bolton, "Building for Profit," De Vinne Press; 3rd edition (1922)
- xi www.nabom.org, www.bomaer.com
- xii Daniel Abramson, "On Architecture and Capitalism: Obsolescence, History, and the Present Crisis" Lecture at Princeton University, Fall 2012
- xiii www.nabom.org
- xiv Daniel Abramson, "Boston's West End," in *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century*, ed. Aggregate. (Pittsburgh: University of Pittsburgh Press, 2012)
- xv Daniel Abramson, "Boston's West End," in *Governing by Design: Architecture, Economy, and Politics in the Twentieth Century*, ed. Aggregate. (Pittsburgh: University of Pittsburgh Press, 2012)
- xvi [Www.bertrandgoldberg.org](http://www.bertrandgoldberg.org)
- xvii "As Prentice comes down, stakes rise on its replacement." *Chicago Tribune*, October 12, 2013

- xviii Prentice – Stone Pavilion Evaluation Study: Laboratory Report - Northwestern University. Jacobs Consultancy, Inc., May 2011
- xix Matei Calinescu. *The Five Faces of Modernity: Modernism, Avant-Garde, Decadence, Kitsch, Postmodernism*. Duke University Press. 1987
- xx Jurgen Habermas and Seyla Ben-Habib, Modernity versus Postmodernity, *New German Critique*, No. 22, Winter 1981, pp 3-14
- xxi Robert Venturi, *Complexity and Contradiction in Architecture*. The Museum of Modern Art, New York: 1966
- xxii Daniel Abramson, "On Architecture and Capitalism: Obsolescence, History, and the Present Crisis" Lecture at Princeton University, Fall 2012
- xxiii Daniel Abramson, "On Architecture and Capitalism: Obsolescence, History, and the Present Crisis" Lecture at Princeton University, Fall 2012
- xxiv Daniel Abramson, "On Architecture and Capitalism: Obsolescence, History, and the Present Crisis" Lecture at Princeton University, Fall 2012
- xxv Daniel Abramson, "On Architecture and Capitalism: Obsolescence, History, and the Present Crisis" Lecture at Princeton University, Fall 2012
- xxvi Robert Venturi, *Complexity and Contradiction in Architecture*. The Museum of Modern Art, New York: 1966
- xxvii Robert Venturi, *Complexity and Contradiction in Architecture*. The Museum of Modern Art, New York: 1966; p. 34
- xxviii Jurgen Habermas and Seyla Ben-Habib, Modernity versus Postmodernity, *New German Critique*, No. 22, Winter 1981, p 4
- xxix Matei Calinescu. *The Five Faces of Modernity: Modernism, Avant-Garde, Decadence, Kitsch, Postmodernism*. Duke University Press. 1987
- xxx Robert Venturi, *Complexity and Contradiction in Architecture*. The Museum of Modern Art, New York: 1966; p. 16
- xxxi Sibyl Moholy-Nagy, Gerhard Schwab and Paul Rudolph, *The Architecture of Paul Rudolph*, New York: Praeger Publishers, 1970
- xxxii <http://prudolph.lib.umassd.edu/introduction>
Sibyl Moholy-Nagy, Gerhard Schwab and Paul Rudolph, *The Architecture of Paul Rudolph*, New York: Praeger Publishers, 1970
- xxxiii Times Herald Record
- xxxiv Letter to Paul Rudolph office from Orange County Planning Board, 1963 – Library of Congress, Paul Rudolph Archives
- xxxv Letter to Paul Rudolph office from Orange County Planning Board, 1963 – Library of Congress, Paul Rudolph Archives
- xxxvi "Orange government center bulging at seams," Time Herald Record, March 16, 1973
- xxxvii "Orange government center bulging at seams," Time Herald Record, March 16, 1973
- xxxviii "Orange government center bulging at seams," Time Herald Record, March 16, 1973
- xxxix http://warwickdems.org/index.php?option=com_content&view=article&id=7:orange-county&catid=10:county)
- xl Letter to Paul Rudolph office from Orange County Planning Board, 1963 – Library of Congress, Paul Rudolph Archives

- xli Time Herald Record, March 16, 1973
- xlii Times Herald Record, 1966
- xliii “Goshen Splits Reaction to County Building” Times Herald Record, 1/18/1966
- xliv Times Herald Record, 1/15/1966
- xlv Times Herald Record, 1/15/1966
- xlvi Architectural Record, August 1971 p. 83
- xlvii Times Herald Record, 1/15/1966
- xlviii Architectural Record, August 1971 p. 83
- xlix Architectural Record, August 1971 p. 83
- l “Paul Rudolph's Elaborate Spaces: Six New Projects,” Architectural Record 139, June 1966; p. 136
- li Times Herald Record
- lii Times Herald Record
- liii Times Herald Record
- liv The 'Physical Condition Assessment of the Orange County Government Center Report – Orange County Department of Public Works, produced by designLAB architects, Clark Patterson Lee and WJE in May of 2013
- lv Sunday Times Herald Record, 4/20/1972
- lvi Theodore H.M. Prudon, *Preservation of Modern Architecture*, John Wiley & Sons, New Jersey: 2008; p. 26
- lvii <http://www.wmf.org/project/orange-county-government-center>
- lviii Fortune Magazine, Jan. 1966)
- lix Paul Rudolph in *Perspecta 7, The Yale Architecture Journal*, New Haven, 1961, p. 51
- lx <http://architizer.com/blog/how-are-mies-buildings-holding-up-on-his-118th-birthday>
- lxi <http://architizer.com/blog/trashing-the-barcelona-pavilion-in-the-name-of-art>
- lxii Charles Gwathmey, Rudolph Building Dedication Program, 2008
- lxiii Charles Gwathmey, Rudolph Building Dedication Program, 2008
- lxiv Stan Eckstut, phone interview January, 2014
- lxv <http://chroniclenewspaper.com/apps/pbcs.dll/articleAID=/20131210/NEWS01/131219992/>
Architects -present-two-design-options-ongovernment-center
- lxvi Paul Rudolph, *Six Determinants of Architectural Form*, Architectural Record v. 120, October 1956, p.183-190

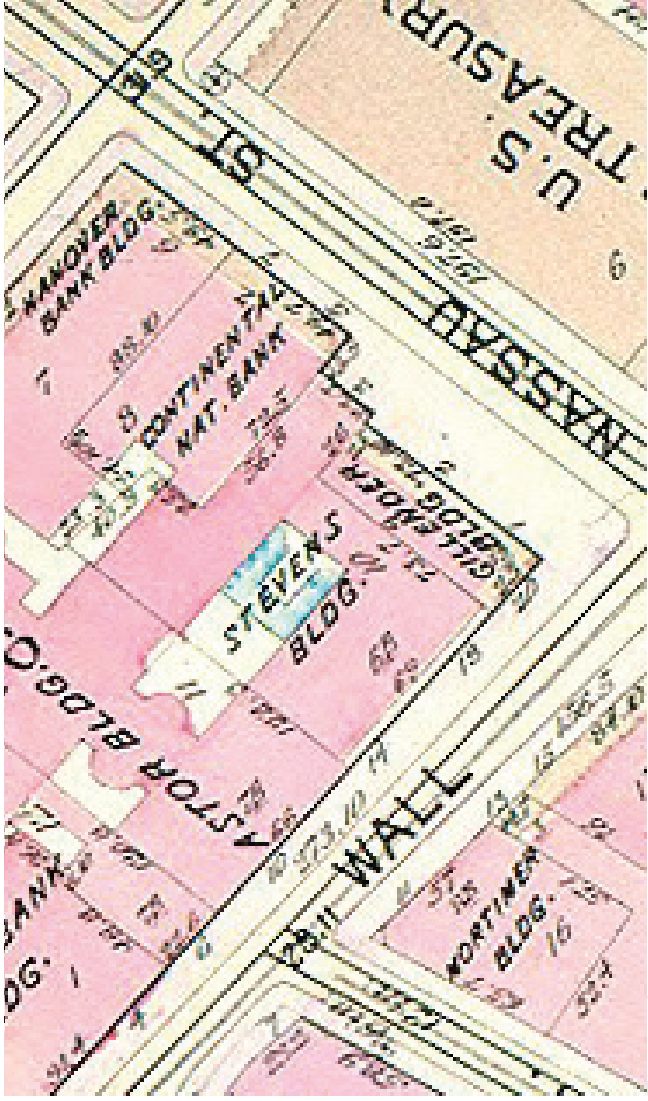


Figure 3

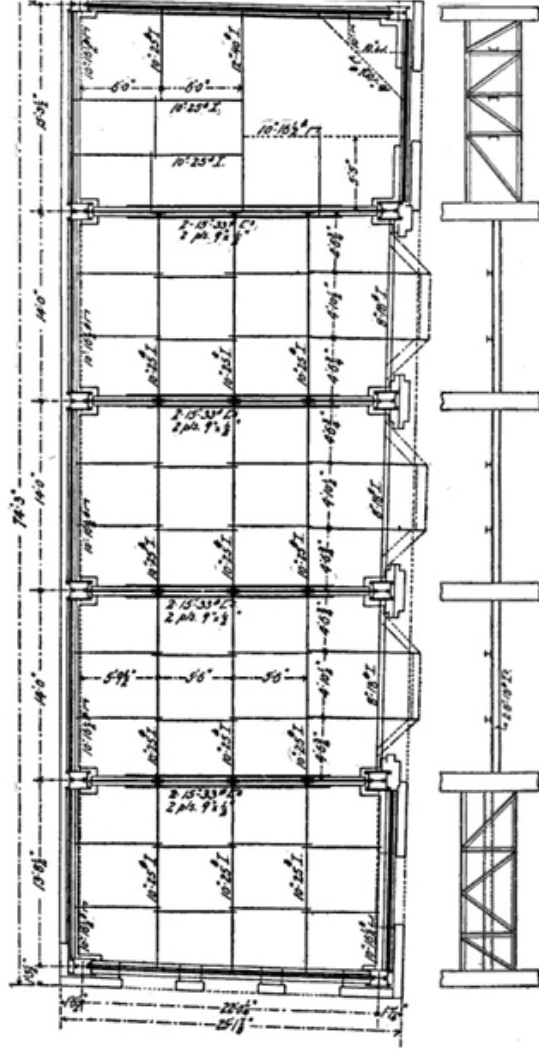
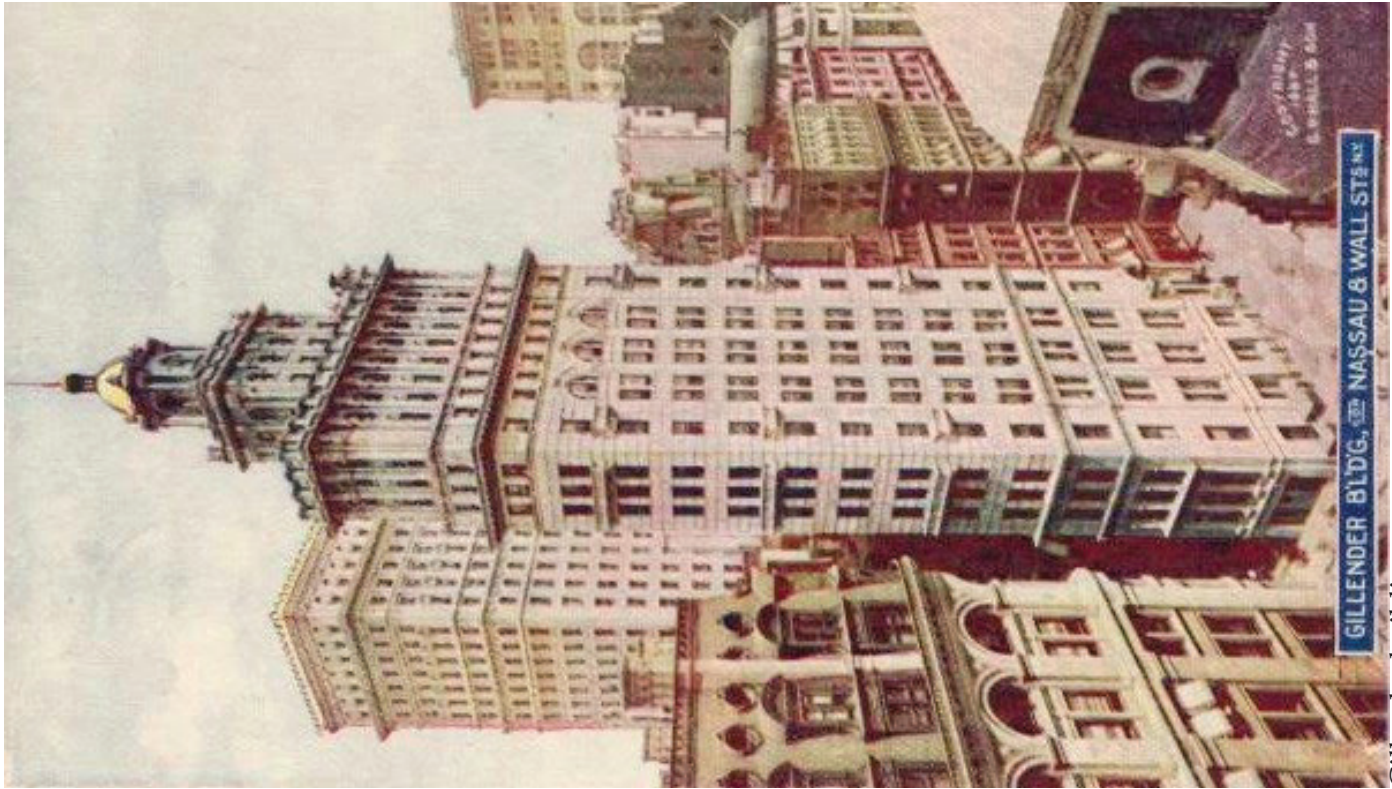


FIG. 60.—Typical Framing Plan, Gillender Building.



Gillender building

SKYSCRAPER WILL REPLACE A TWENTY-STORY STRUCTURE: Gillender Building ...
The Christian Science Monitor (1908-Current file); May 5, 1910;
 ProQuest Historical Newspapers: The Christian Science Monitor (1908-1999)

SKYSCRAPER WILL REPLACE A TWENTY-STORY STRUCTURE

Gillender Building Erected in
 New York but Fourteen
 Years Ago Is Being Razed
 Today.

NEW YORK Workmen are making good headway at wrecking the 20-story Gillender building, located at the corner of Wall and Nassau streets, which is to give way to a 39-story skyscraper to be erected by the Bankers Trust Company.

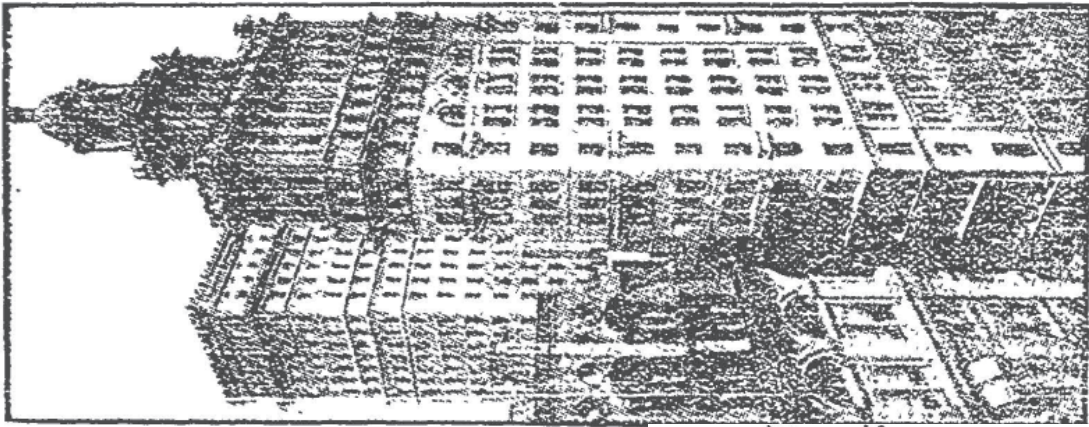
The passing of the Gillender building is another evidence of the rapid changes in New York buildings. It was put up in 1896. Not so many years ago the Gillender property was pointed to with pride as one of the city's tallest and handsomest buildings. Today, because it is 10 stories too short, as well as too narrow, to be a profitable investment it is being dismantled. The wrecking will take two months' time.

BREAKING RECORDS IN HOUSE-WRECKING

The 20-Story Gillender Building
 Fast Coming Down Before the
 Contractor's Attacks.

AIR GUNS TURNED ON IT

To Loosen the Brick Walls—Down to
 the Third Floor, with Sixteen
 Days to Finish.



GILLENDEY BUILDING,
 corner at Wall and Nassau streets was
 the pride of Manhattan a
 few years ago

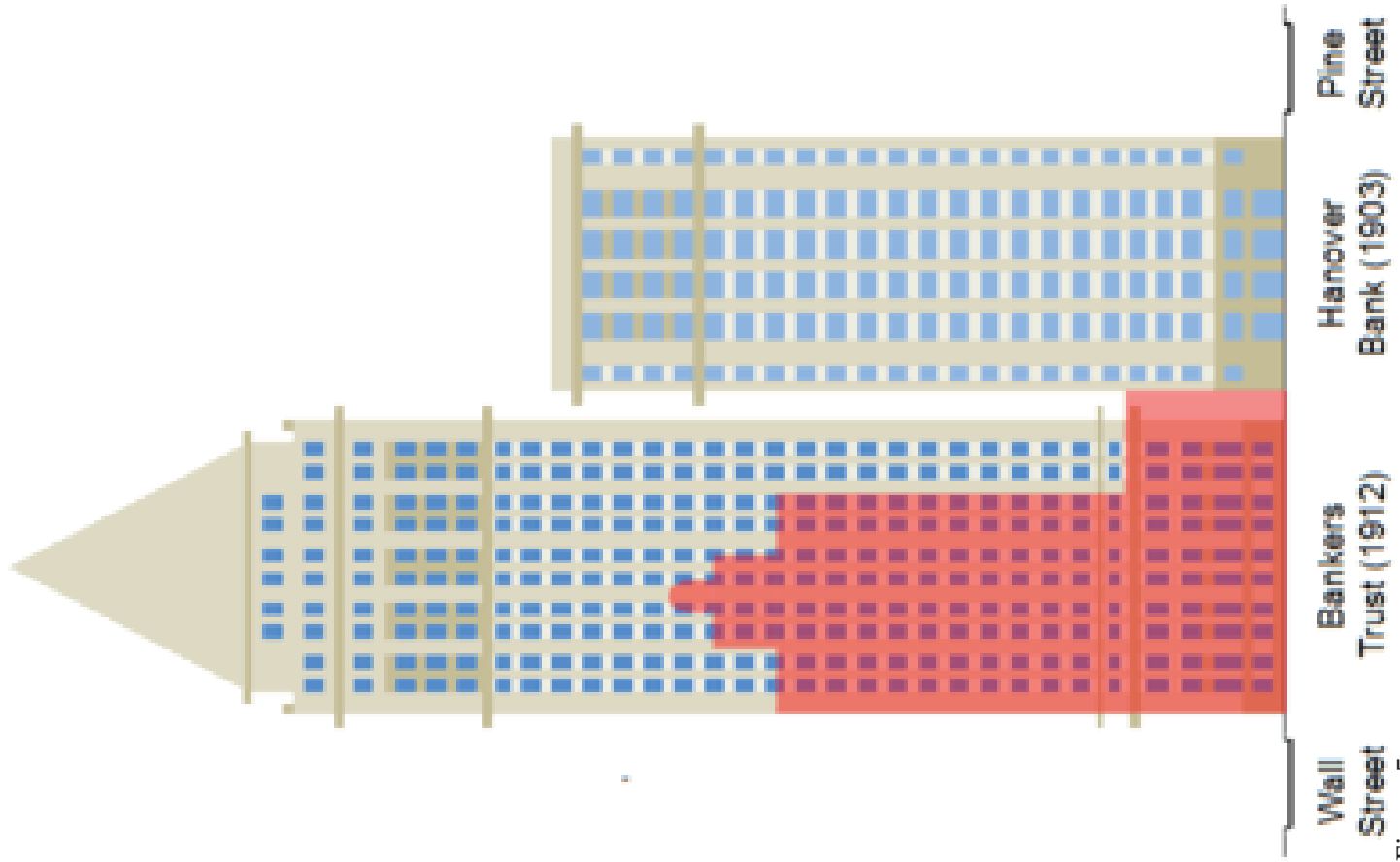
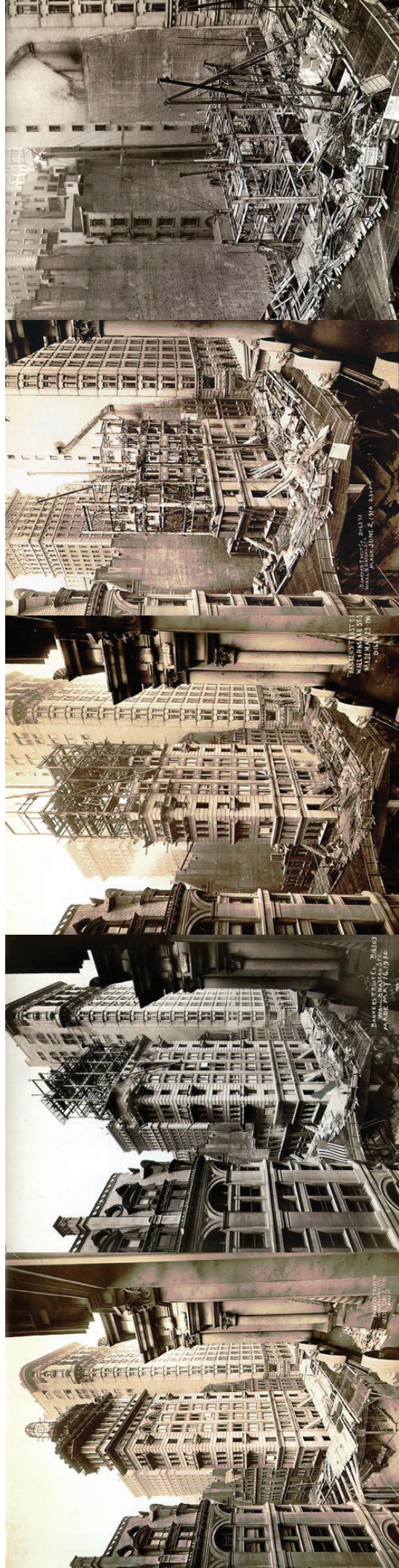


Figure 5



Demolition of Gillender building

Progress Has Taken Many of New York's Original Skyscrapers

Gillender Building Was First of Our Towers To Be Taken Down

SKYSCRAPER WILL REPLACE A TWENTY-STORY STRUCTURE.

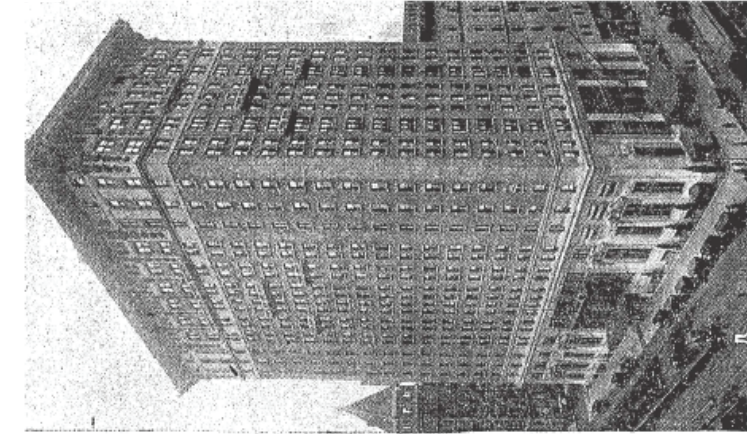
BREAKING RECORDS IN HOUSE-WRECKING

The 20-Story Gillender Building Fast Coming Down Before the Contractor's Attacks.

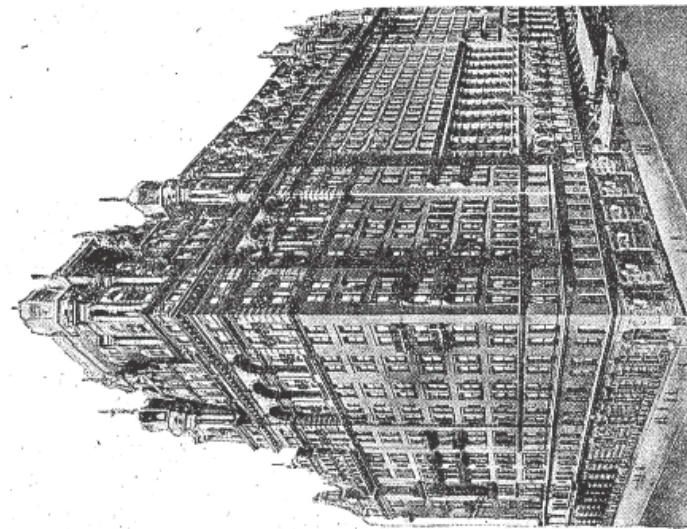
"BIG LITTLE BUILDINGS"

A SKYSCRAPER'S LIFE.

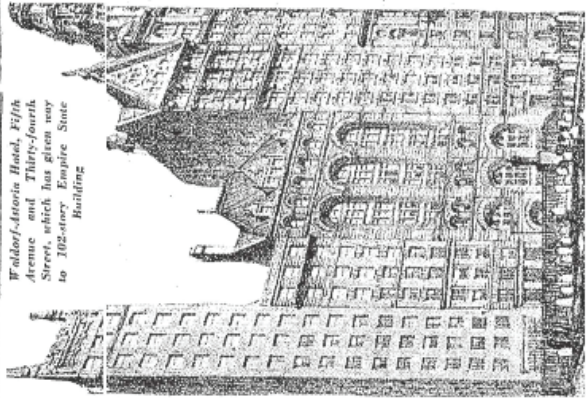
Modern Structure's Age Declared to Be Almost Unlimited.



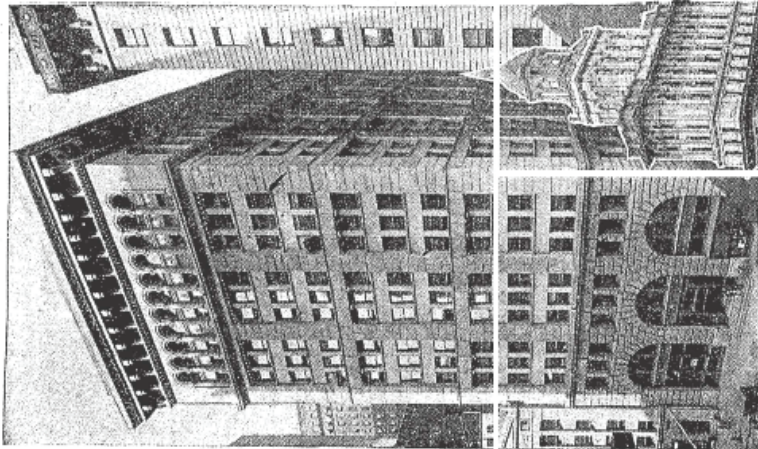
Brown Bldg. on a corner, Park Avenue and Forty-second Street, 22 stories, now in hands of wreckers



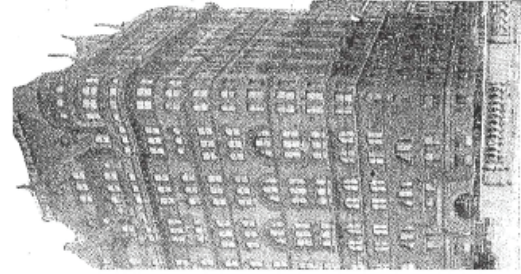
Waldorf-Astoria Hotel, Fifth Avenue and Thirty-fourth Street, which has given way to 102-story Empire State Building



The Chimney and adjoining buildings at Broadway and Wall Street, razed for 53-story Irving Trust Building



Johnston Building, Broad Street and Exchange Place, being removed to make way for a 40-story structure



Old Hotel Netherlands, Fifth Avenue and Fifty-ninth Street, has been removed to make way for new Sherry Netherlands, forty-three stories



Old Gillender Building, first skyscraper to be razed

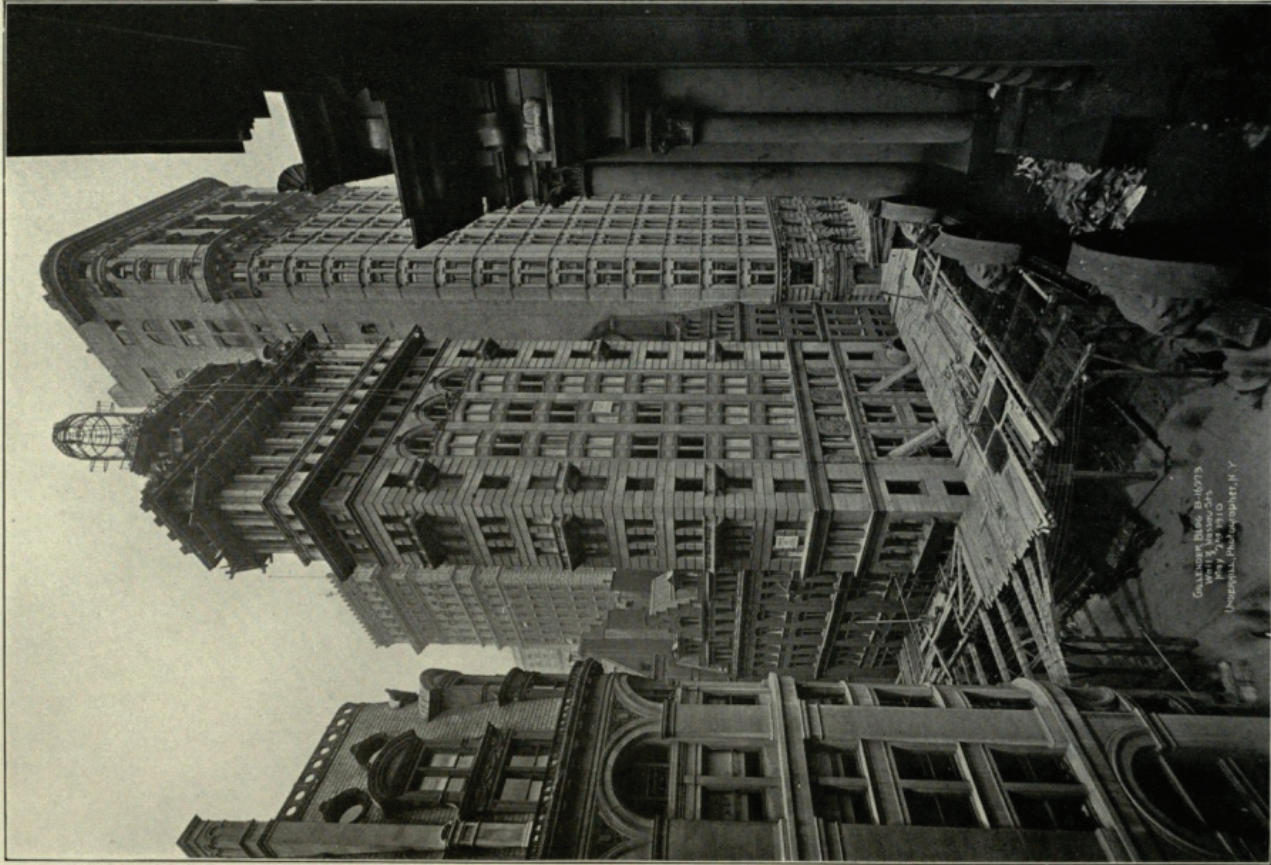
bers are protected in a sufficient manner. But in these days the durability of building materials has mostly been dropped from the list of controversial questions in metropolitan work. For in practice it is found that the physical is almost certain to exceed the economic durability of a building as a whole.

Over-expenditure in original construction, ill proportion for the value of the site, unsuitability for situation, and maldesign are fundamental causes which hasten the progress of financial decay.

But other causes for which the designers of the building are not directly responsible, but by which the property is nevertheless a sufferer, may equally inevitably bring about a period to the useful existence of a building. A change of fashion, a shift of business, movement of population, alteration in line of

ECONOMIC EXISTENCE OF BUILDINGS

Type of building	Life in years
"Taxpayer"	12-15
Hotels	15-18
Apartment-houses	18-21
Store buildings	21-25
Tenements and flats	25-27
Office and business buildings	27-33
Lofts and factories	33-37
Residences	37-44
Banks and institutions	44-50



"Over-expenditure in original construction, ill proportioned for the value of the site, is a fundamental cause of financial decay"

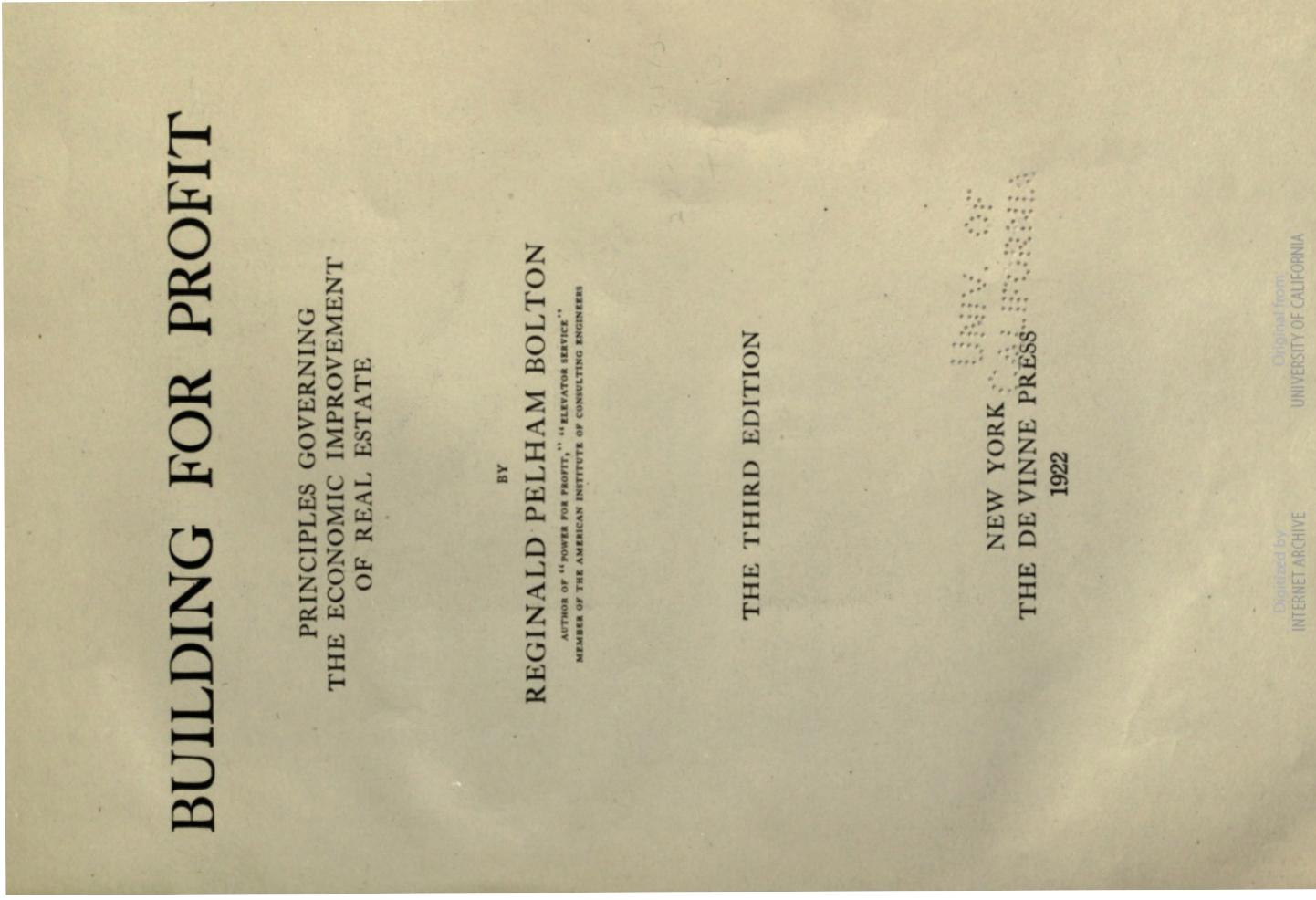
from Reginald Bolton's 'Building for Profit'



Reginald Pelham Bolton

First Edition 1911

from Reginald Bolton's 'Building for Profit'



BUILDING FOR PROFIT

PRINCIPLES GOVERNING
THE ECONOMIC IMPROVEMENT
OF REAL ESTATE

BY
REGINALD PELHAM BOLTON
AUTHOR OF "POWER FOR PROFIT," "ELEVATOR SERVICE"
MEMBER OF THE AMERICAN INSTITUTE OF CONSULTING ENGINEERS

THE THIRD EDITION

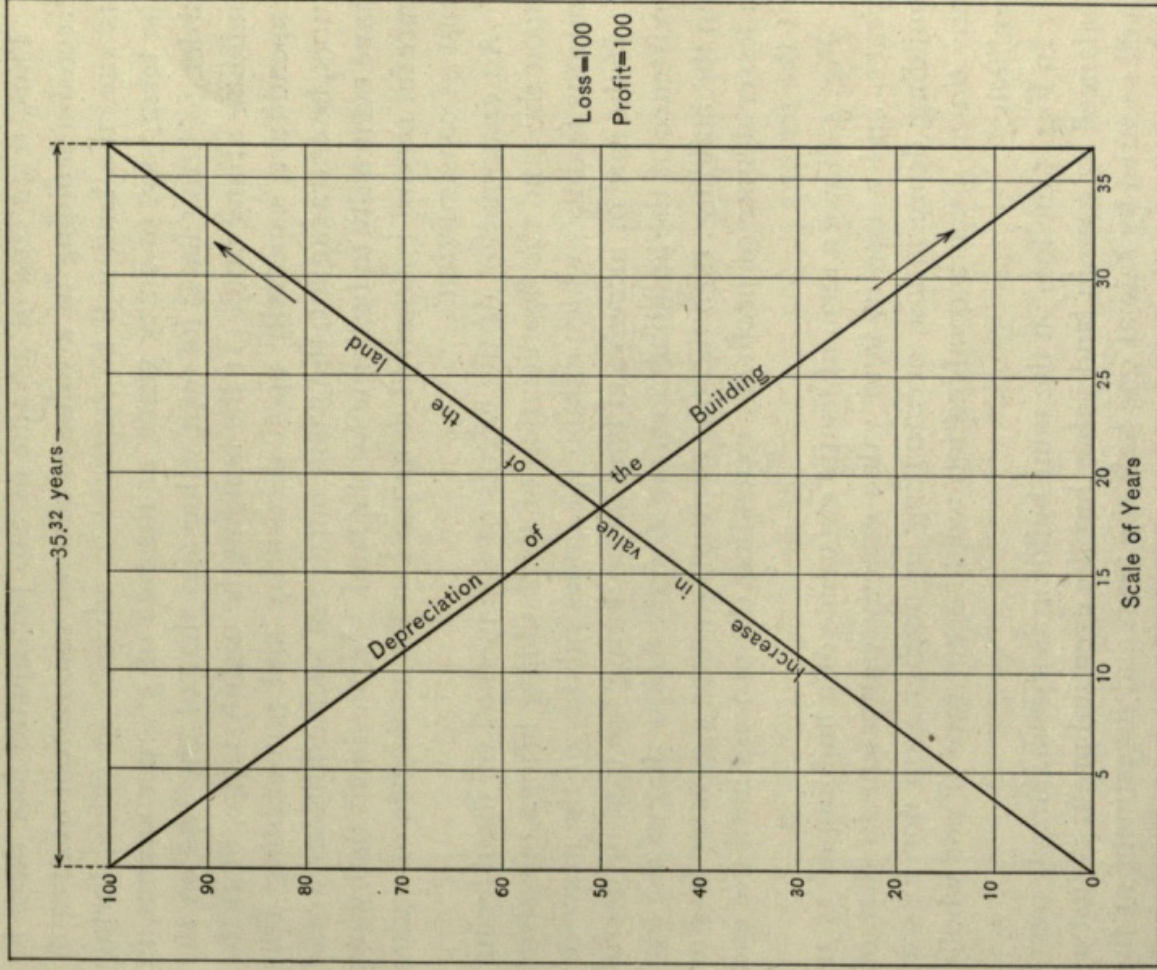
NEW YORK
THE DEVINNE PRESS
1922

Digitized by
INTERNET ARCHIVE

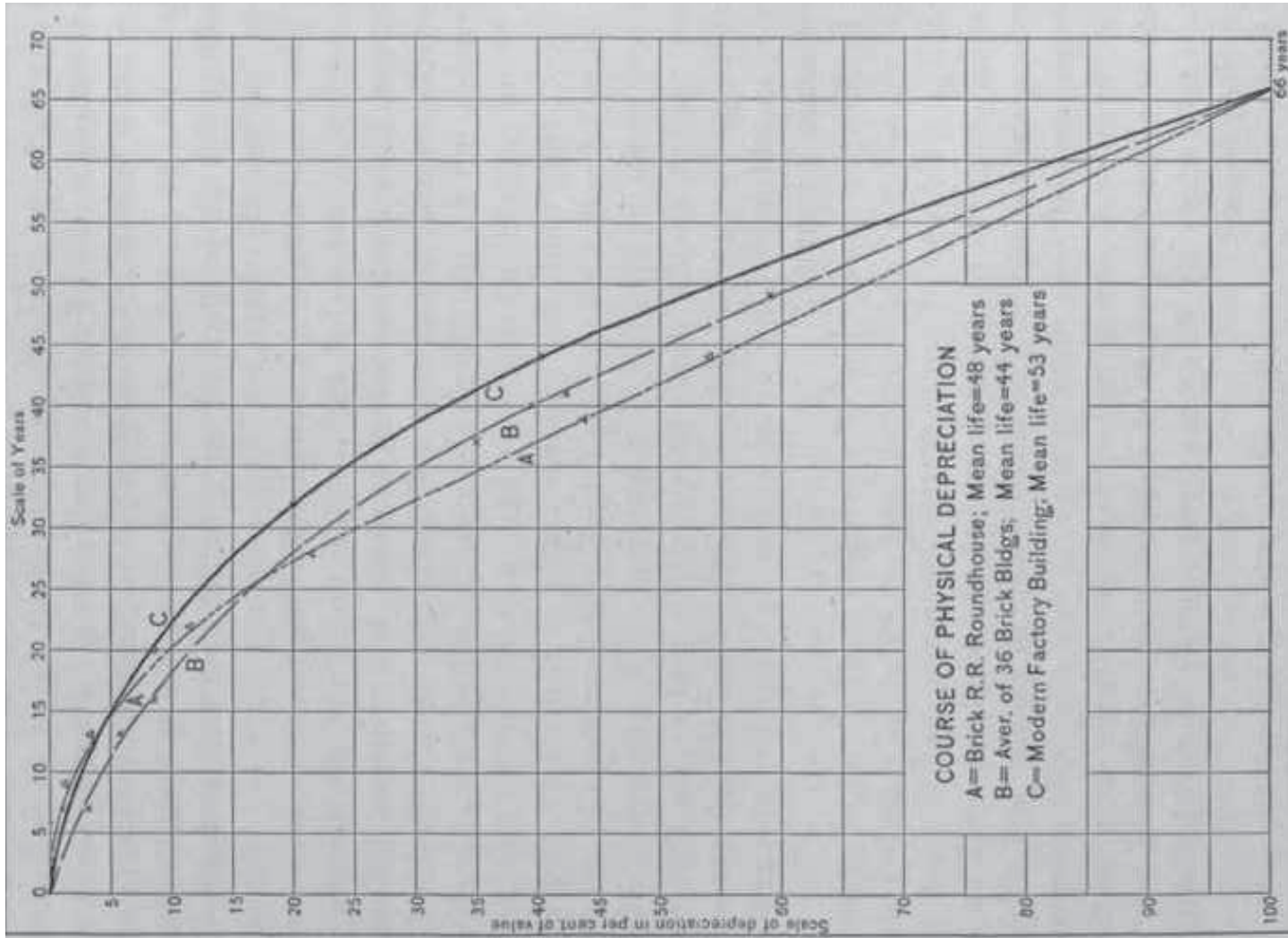
Original from
UNIVERSITY OF CALIFORNIA

Appreciation of Value of Land

FIG. 4



Loss on building exactly balanced by gain on land. Neither loss nor gain at any part of term



CLASSIFICATION OF DEPRECIATION

Deduced from R. M. Hurd's assignments of life

Construction	Occupancy	Term of life in years	Rate of fund proposed in %	Term of sink- ing fund @ 3%, in years
Cheap frame	Tenements	10-15	10-5	9-16
Cheap frame	Residences	25-30	3-2	23-31
Better-class frame	Residences	50-75	2-1	31-47
Cheap brick	Tenements	25-30	3-2	23-31
Cheap brick	Residences	35-50	2-1	31-47
Cheap brick	Office buildings	25-30	3-2	23-31
Better-class brick	Residences	50-75	1½-1	37-47
Good brick or stone	Office buildings	75-100	1	47

NOTE: Sinking-funds bring all the above within 47 years.

BOMA International – 100 Years and Counting

By Laura Horsley

How it all Started

BOMA International has been serving the commercial real estate industry since the first buildings took that vertical stretch to reach just a little closer to the sky.

It seems only fitting that the birthplace of the skyscraper, Chicago, was also home to the first annual convention of a national association dedicated to the needs of a young industry on the brink of extraordinary growth and prosperity. That was 1908, just a year after the National Association of Building Owners and Managers (NABOM) was established under the leadership of E.H. Doyle of Detroit. That first Chicago Convention, which attracted 75 people from 26 cities, truly set the tone for the next hundred years when attendee Clarence Coley from New York surprised his colleagues by giving detailed figures of his building's operating costs. The seed of the Experience Exchange Report (EER) was planted.

NABOM's official constitution and bylaws were established during the 4th annual convention and members were asked to support the association through annual dues of \$10. As membership grew, the association became more

and more influential. Between 1913 and 1916, the association established a National Building Code, successfully lobbied against fuel allotments and tax increases during World War I and adopted the Standard Method of Floor Measurement. By the time the war had ended, industry leader Col. Gordon Strong helped strengthen and unite the industry by advocating a membership restructuring to alleviate competition between locals and National.

Boom but No Bust

For the building industry, the '20s truly roared. NABOM began developing strategies, standards and policies that set essential guidelines for manageable growth. The decade also saw the establishment of the national office in Chicago and local associations became federated members of the national association. With the adoption of the Standardized Classification of Accounts in 1916, members began submitting their expenses, and by 1920 the EER was born. The decade also saw standards set in several areas, including a standard for both passenger and material handling elevator capacity, platform sizes and methods of testing. Standards for lease forms and accounting procedures for depreciation were also adopted. The Building Planning Service was developed in 1923 by Earle Schultz to help developers with construction and operating cost overruns, and in 1924 the first Occupancy Survey released national-wide occupancy statistics.

President Maynard Hokanson (center) with John L. Hill, Houston member-at-large (left), and John Williams, president, Building Owners and Managers Association of Los Angeles, at the 1938 Convention in Toronto.



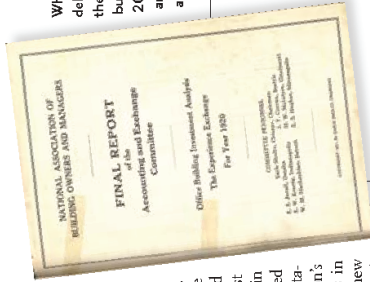
NABOM President Charles Palmer helped the industry face the challenges of the Depression years head on. He charged each association member with the responsibility of holding rental rates and maintaining property values, and pushed the association's Wage and Price Provision, which helped restore employment in the industry and protected building owners and managers from exorbitant operating cost increases. Advocacy pushed to the forefront in the '30s when the national association named Harry J. Cernity its "Washington Representative" in 1931. Cernity reported the association's legislative activities back to the members in his "Washington Letter" column in the new *Skyscraper Management* magazine. The decade also saw the completion of the Empire State Building and the first steps toward modernization with the advent of fluorescent lighting and air-conditioning.

Strength through Growth and Partnering

At the outset of the '40s, a committee was formed on Depreciation and Obsolescence. Testimony from the committee's chairman resulted in an Oklahoma court concluding that 40 years was reasonable for the economic life of a building. With the arrival of World War II, NABOM developed plans to ensure the safety of the occupants of city buildings, which were incorporated into the nation's official Civil Defense Program. In 1942, association president Leo Sheridan used statistics from the EER when he appeared before a Senate subcommittee to successfully argue that federal commercial rent control was unnecessary. In 1944 Canada became an official region, the first membership directory appeared in *Skyscraper Management* magazine and "members at large" were welcomed into the national association.

Following World War II, the association successfully kept rent control at bay through decisive lobbying, but rising income taxes continued to whittle away at profits. As downtown locations became more and more coveted, NABOM began focusing on issues such as off-street parking, transportation and continued modernization of interior space. The Economic Council was formed in 1953 to annually evaluate the state of the industry in relation to the overall economy, and a new era of public/private partnership was established in the mid-1950s as the industry ramped up relations with the General Services Administration (GSA), which owned six million square feet of office space by 1957.

Skyscraper Management, the magazine for all commercial buildings, was first sent to members in 1931.



When the Experience Exchange Report (EER) debuted in 1920, 90 buildings reported and the average total operating expenses for a building in Chicago was \$0.75 per sq. ft. In 2006, more than 5,000 buildings reported and the average total operating expenses for a building in Chicago was \$6.72 per sq. ft.

Technology Takes Hold, Advocacy Strengthens and Products Abound

Advances in design and construction set the tone for the '60s, fueling the dizzying rise of office buildings. Specific advances included reinforced concrete for safe construction of buildings up to 40 stories and fluorescent tubes with lives ranging from 12,000 to 13,000 hours. The growth of the industry was reflected in membership increases as NABOM grew to nearly 2,000 members by 1962, 300 of whom were in Australia, Canada, England and Japan. This growth and overseas expansion prompted the association to change its name on July 4, 1968 to the Building Owners and Managers Association International.

BOMA successfully halted another inflation of rent control in the '70s when President Nixon announced emergency anti-inflation measures. BOMA's argument – that any regulation holding rents would, in essence, be a price rollback and not a freeze – won out. During the 1974 Annual Convention, the association issued a compilation of position statements, which included land use, clean air act amendments, Occupational Safety and Health Administration (OSHA) reform and tax reform. The BOMA headquarters move to Washington, D.C. in 1976 paid off as BOMA acted as an intermediary between other real estate trade groups and the Department of Energy during the energy crisis, prompting Congress to pass legislation giving businesses the opportunity to create their own energy conservation plans. The '70s also saw the launch of the Real Property Administrator (RPA) designation program and the founding of the Building Owners and Managers Institute (BOMI).

Further strengthening of BOMA's government affairs efforts took place in the '80s with the formation of the National Advisory Council (NAC) to provide a forum for senior executives of major real estate firms to discuss key industry issues. Building owners received much needed tax breaks with the passage of the Economic Recovery Act in 1981, and BOMA was busier than ever with a legislative focus that included energy conservation, asbestos, chlorofluorocarbons (CFCs), accessibility for the disabled, tax reform and capital gains. BOMA revised the Standard Method of Floor Measure-





Photo: Courtesy MIT Museum

pg. 5

Debate Mounts in Boston Over Plan to Rebuild West End District

By Emilie Tavel
Staff writer of *the Boston Globe*

Huge Project Would Oust Thousands

...tion of the area, school buildings are not filled to capacity, and that the incidence of disease





Debate Mounts in Boston Over Plan to Rebuild West End District

Huge Project Would Oust Thousands

By Emilie Tevel
Staff writer of



Social / Cultural / Health

- Socially incohesive
- Working Class Immigrant Population
 - Lack of sunlight & air
 - Claustrophobic
- Poor physical & mental health (high TB rates)
 - Noisy
- Lack of aesthetic satisfaction
- Ethnic & racial heterogeneity

Economic

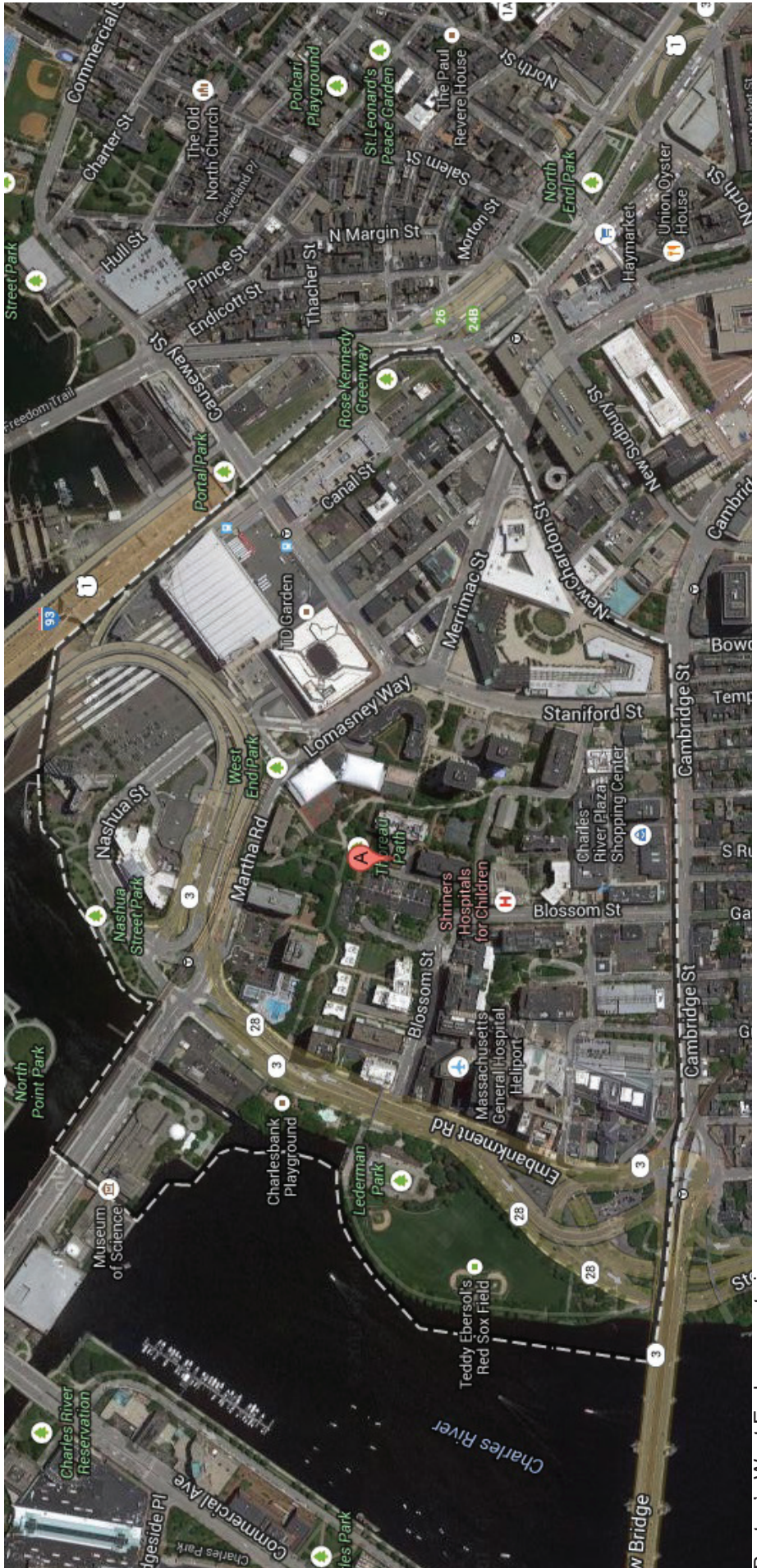
- Low rents
- Tax deficit to the city (cost of services v. tax revenue)
 - Further depreciation expected
 - Threat to nearby business districts

Physical / Spatial

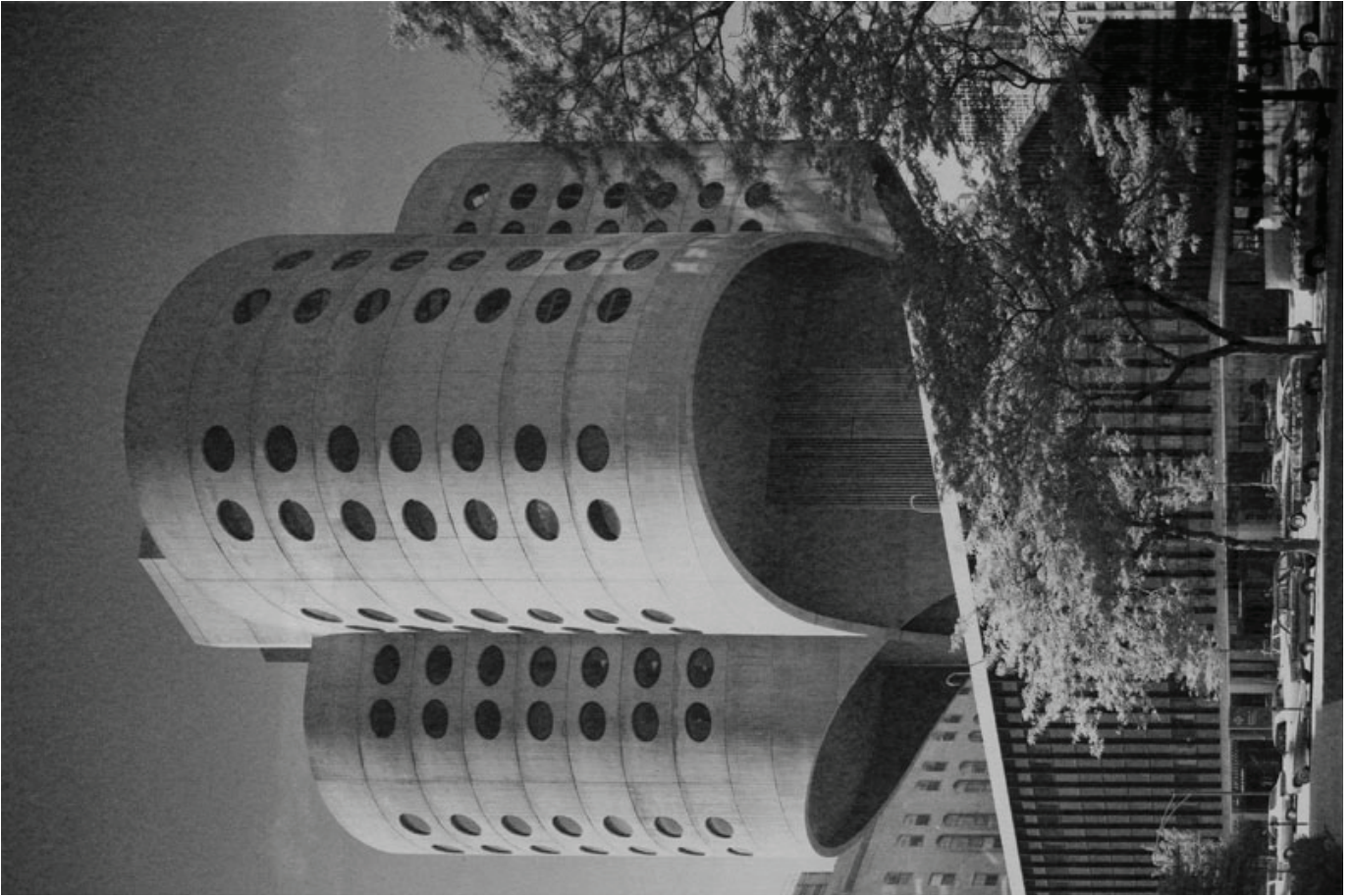
- Dense & Disorderly
- Poorly maintained
- Structural threats
- Lack of open space
- Lack of parking space



Pruitt-Igoe, Built 1956, Demolished 1972



Boston's West End - current views



Prentice Women's Hospital - Then and Now

As Prentice comes down, stakes rise on its replacement

Northwestern has a chance to replace Goldberg's innovative hospital with something better, but will it?

October 12, 2013 | By Blair Kamin, Tribune critic



VOA Architects, 2007

Construction cost for converting old Prentice: \$1,200,000
Construction cost estimated for new building: \$1,570,000

Construction budget for 2007 building: \$280,000,000
Total cost: \$450 million

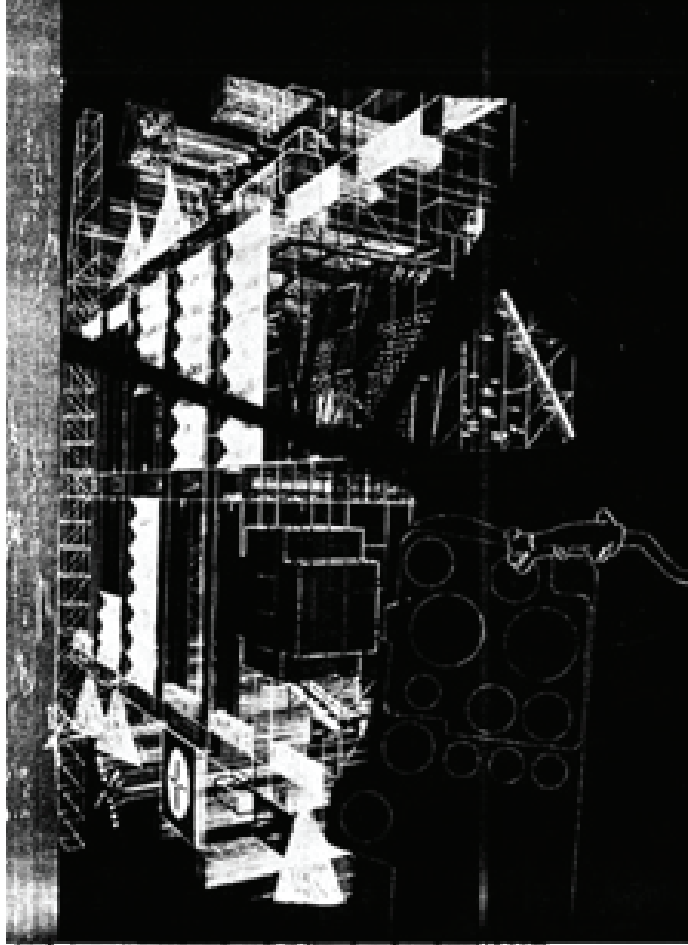
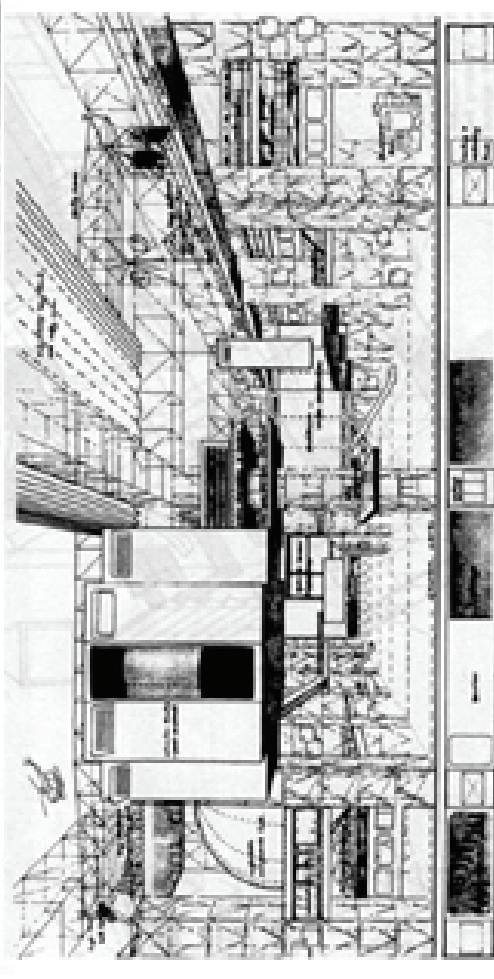
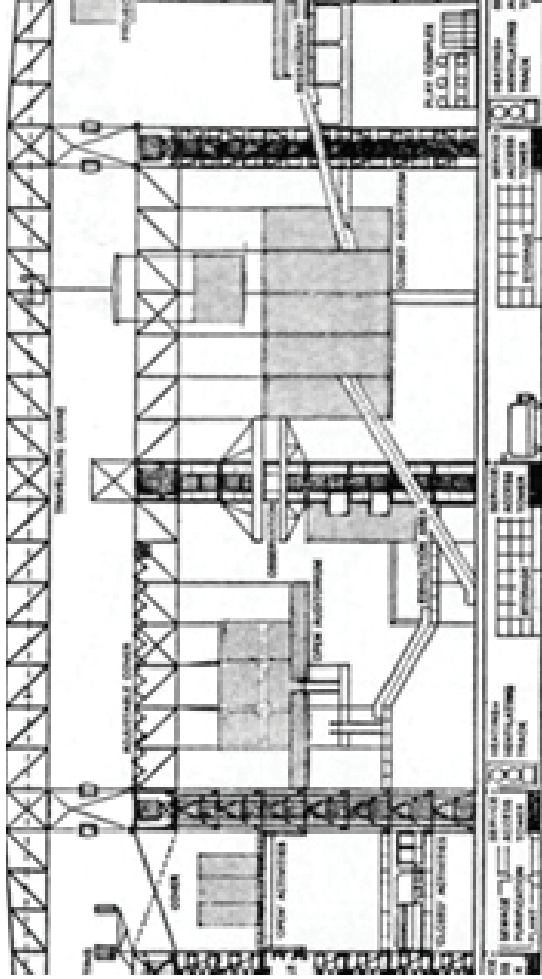
Only 6 years old, the building is now facing millions in repairs due to construction flaws including replacement of flooring, repair of walls and resolving issues with sealant and insulation

Operational expenses have been doubling by the year as total revenue has flatlined. NW saved costs by dropping employee benefits and reducing workforce.

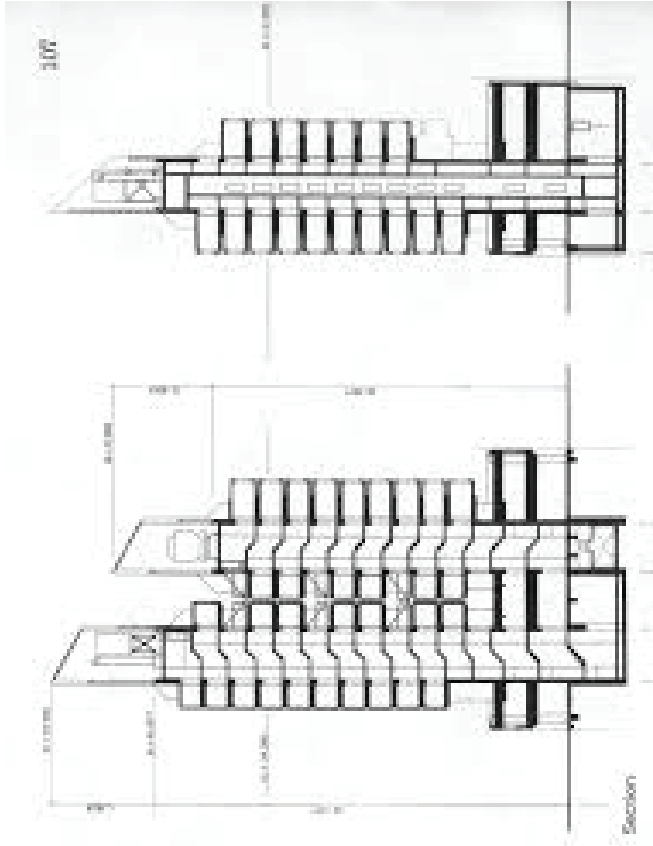
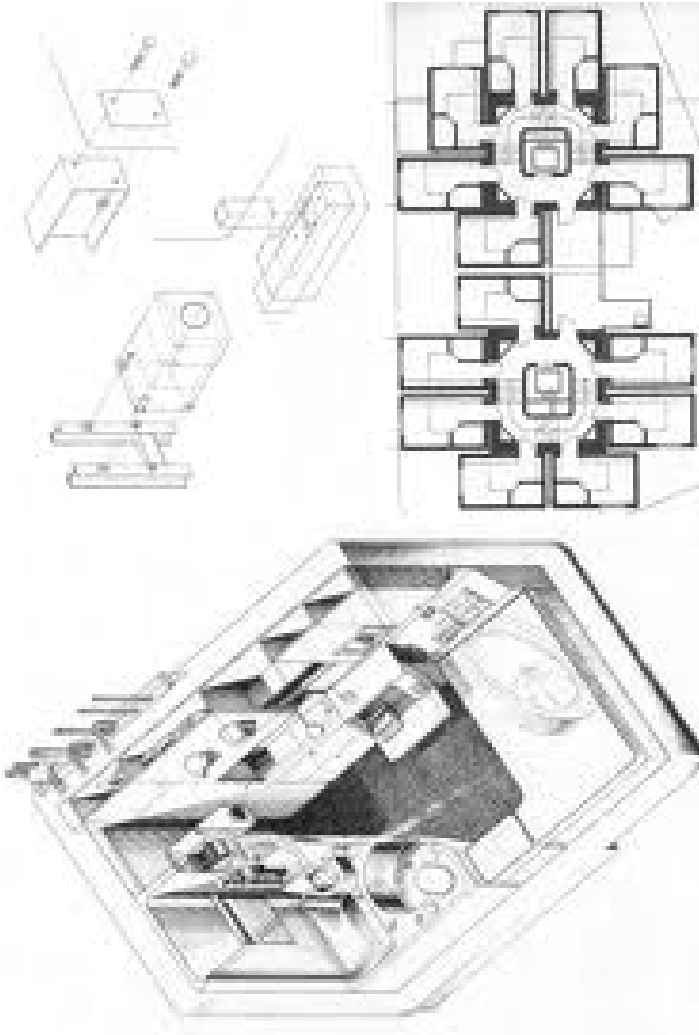
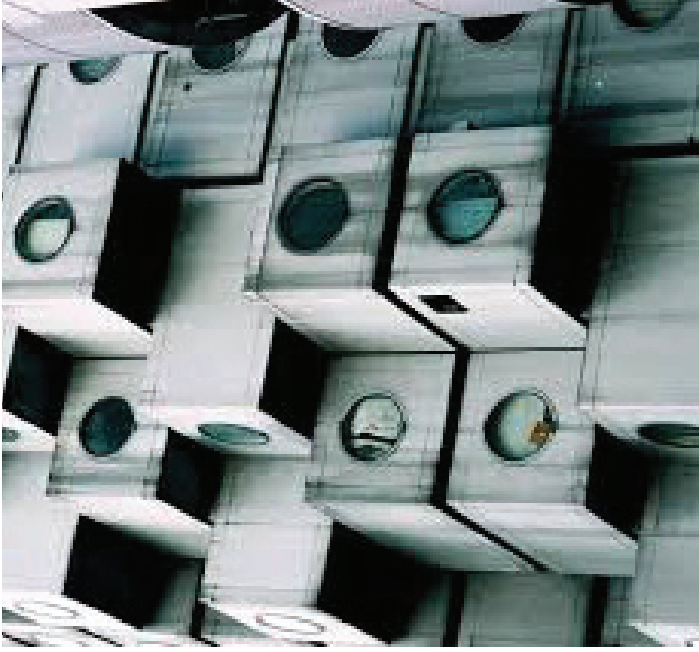
<http://www.chicagobusiness.com/article/20130423/>



This is Tomorrow' Exhibit, 1956

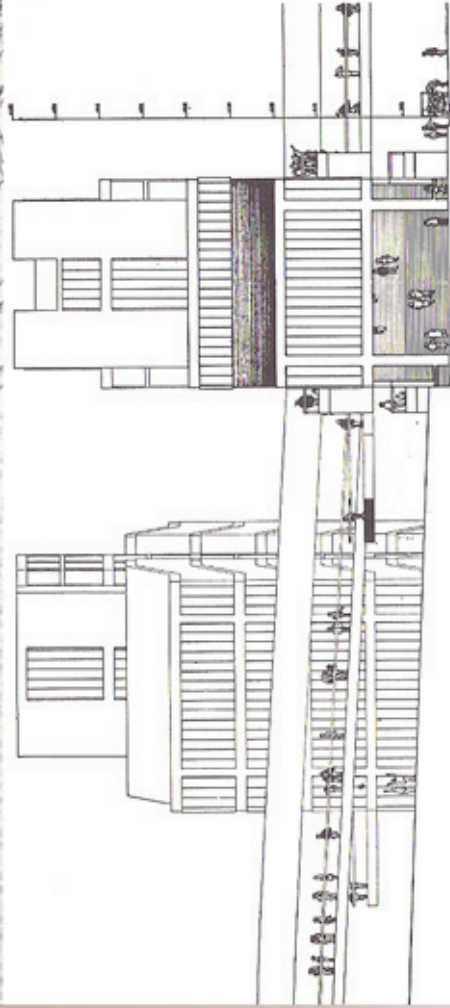
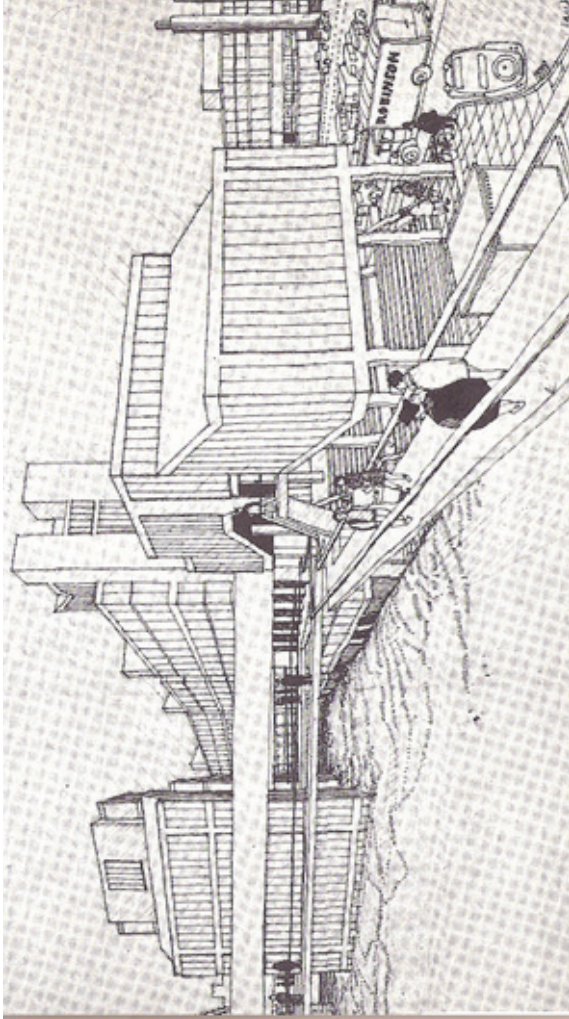
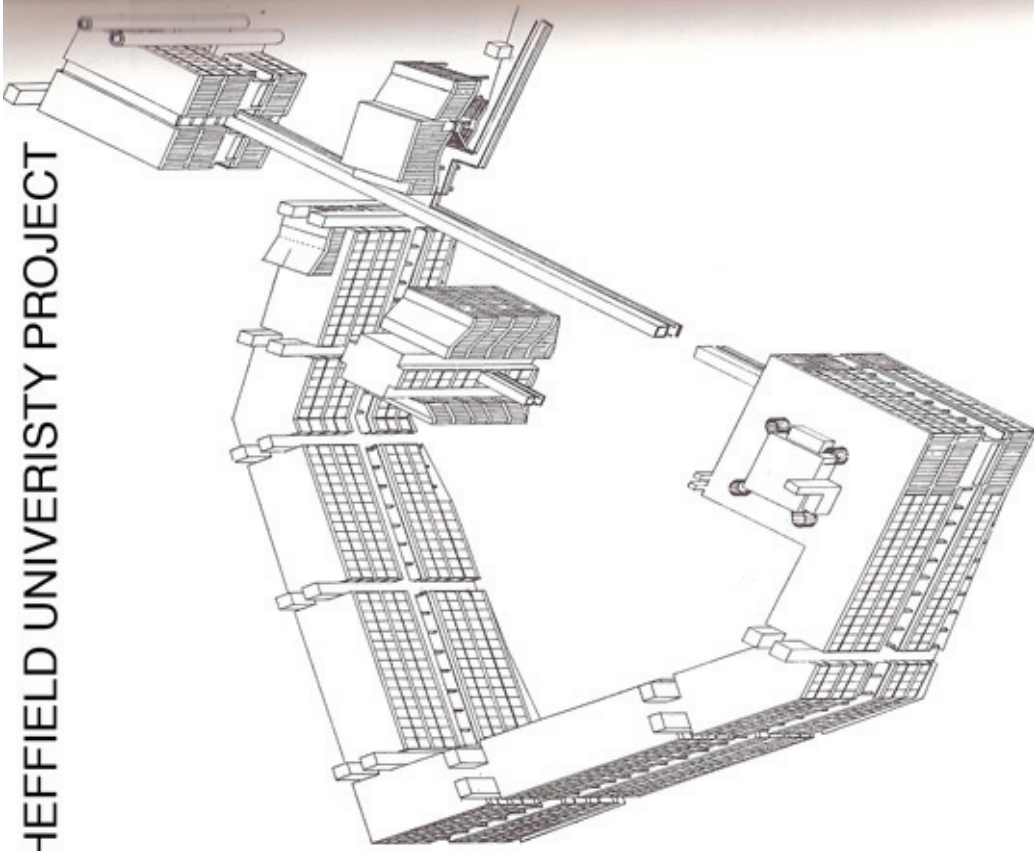


Cedric Price
Fun Palace (1961)



Frame & Capsule Megastructures, Kurokawa, 1970-72

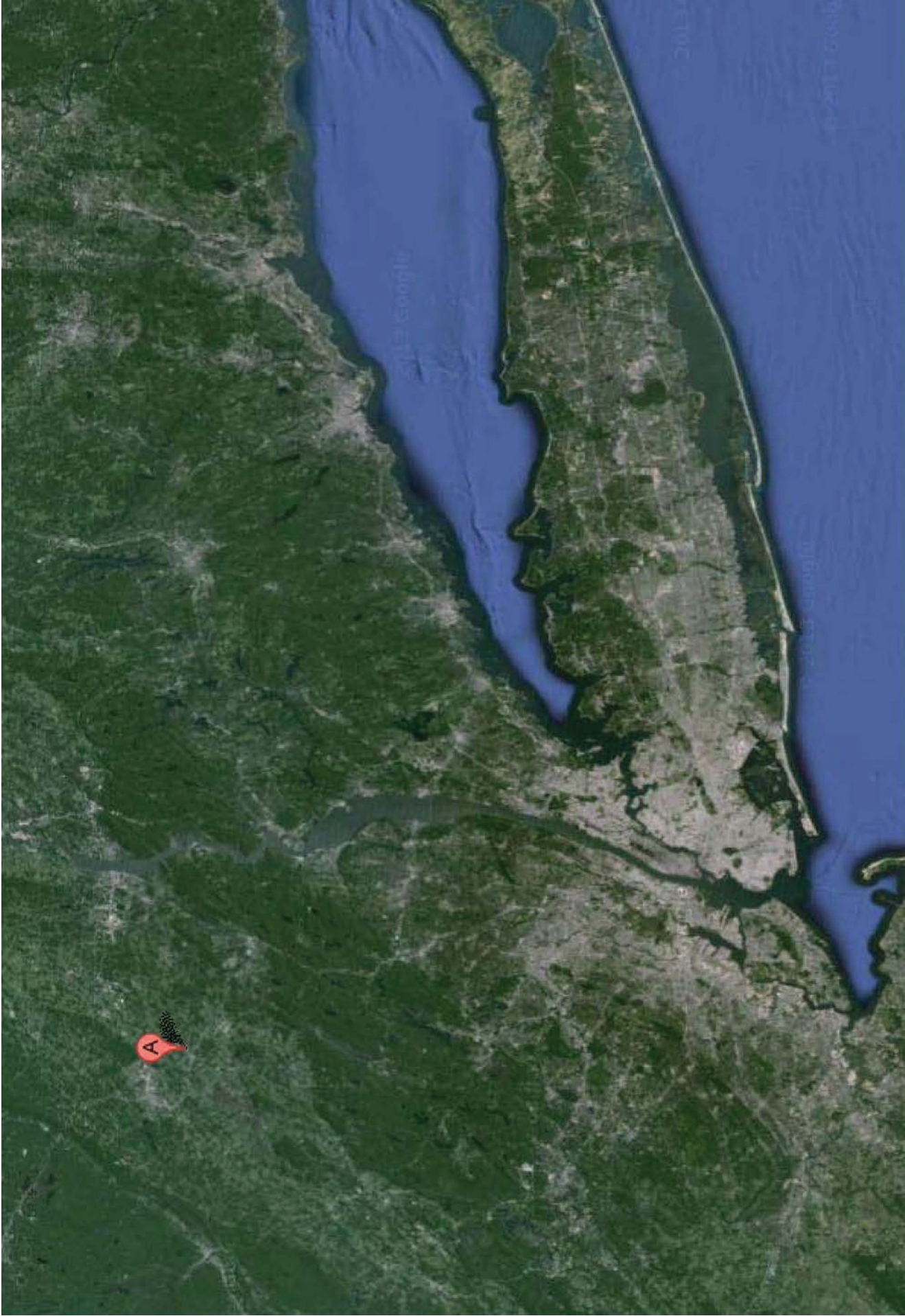
SHEFFIELD UNIVERSITY PROJECT



Sheffield University, A&P Smithson, 1953



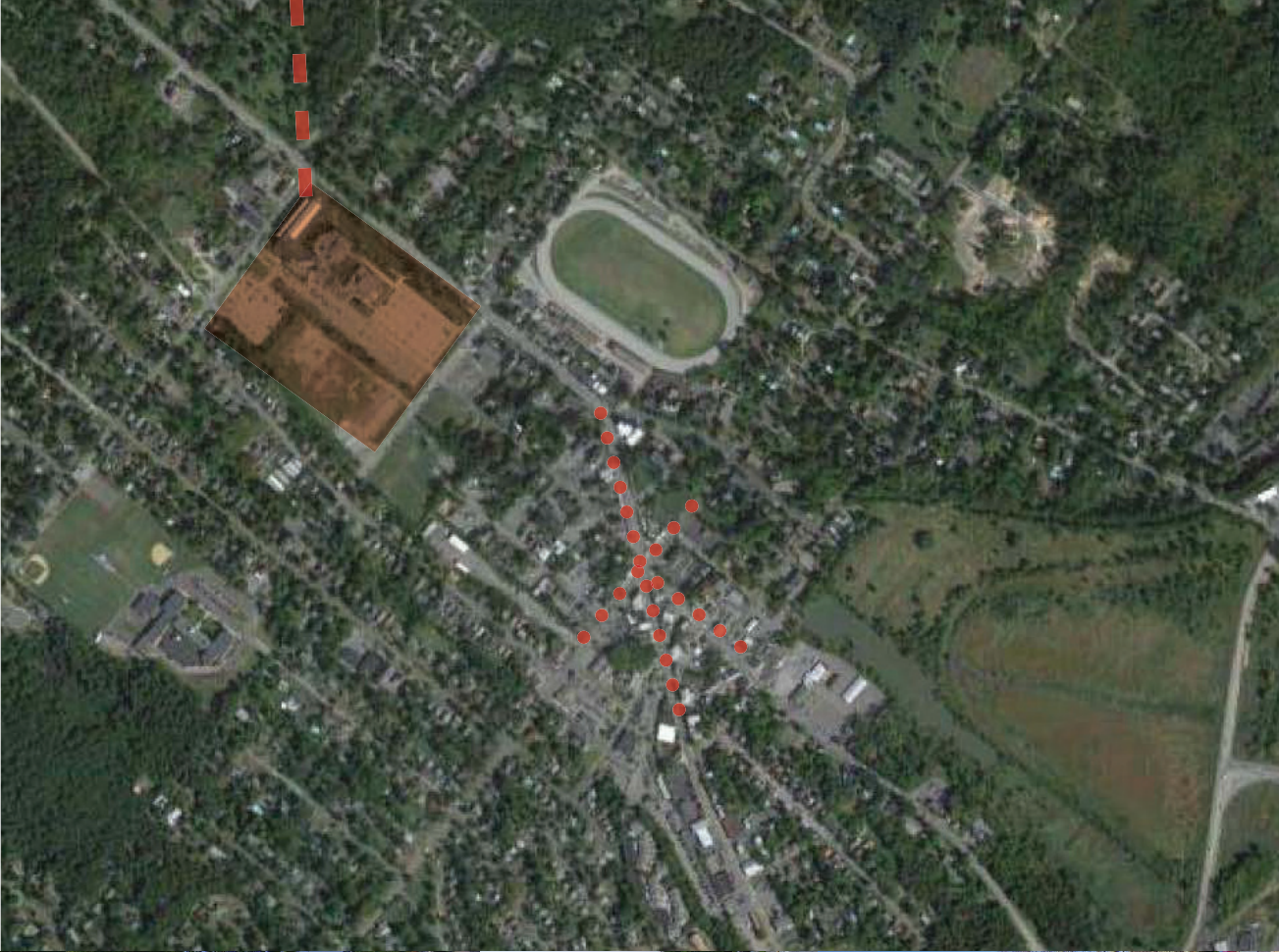
Orange County Courthouse, Paul Rudolph, 1967



Goshen, NY



Goshen, NY

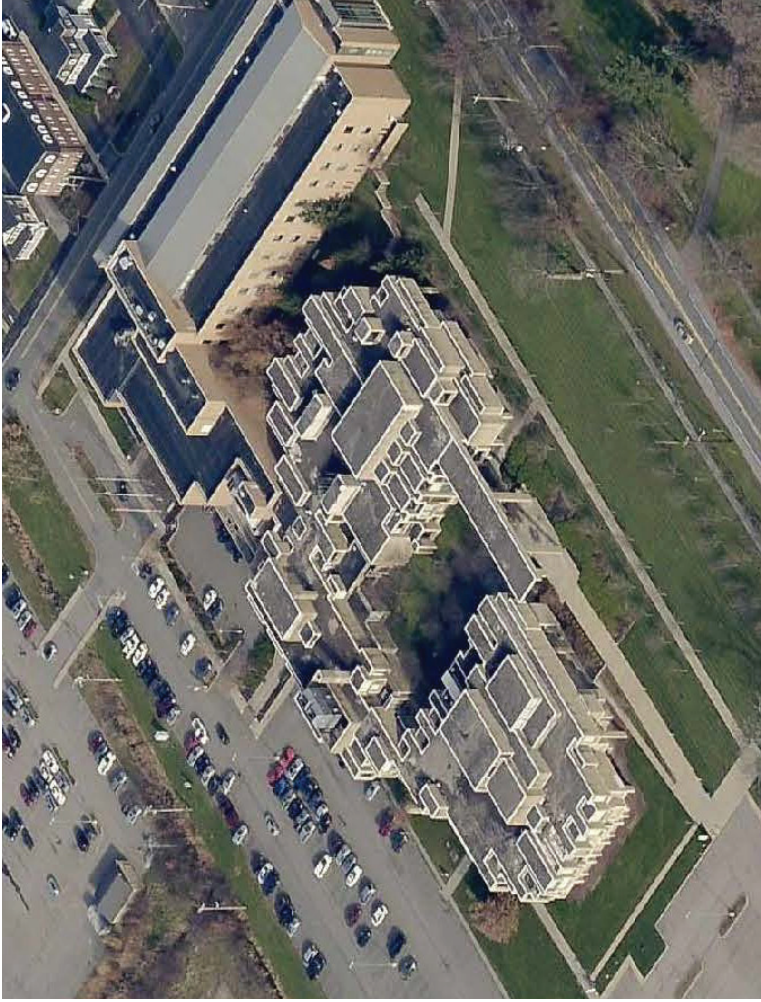
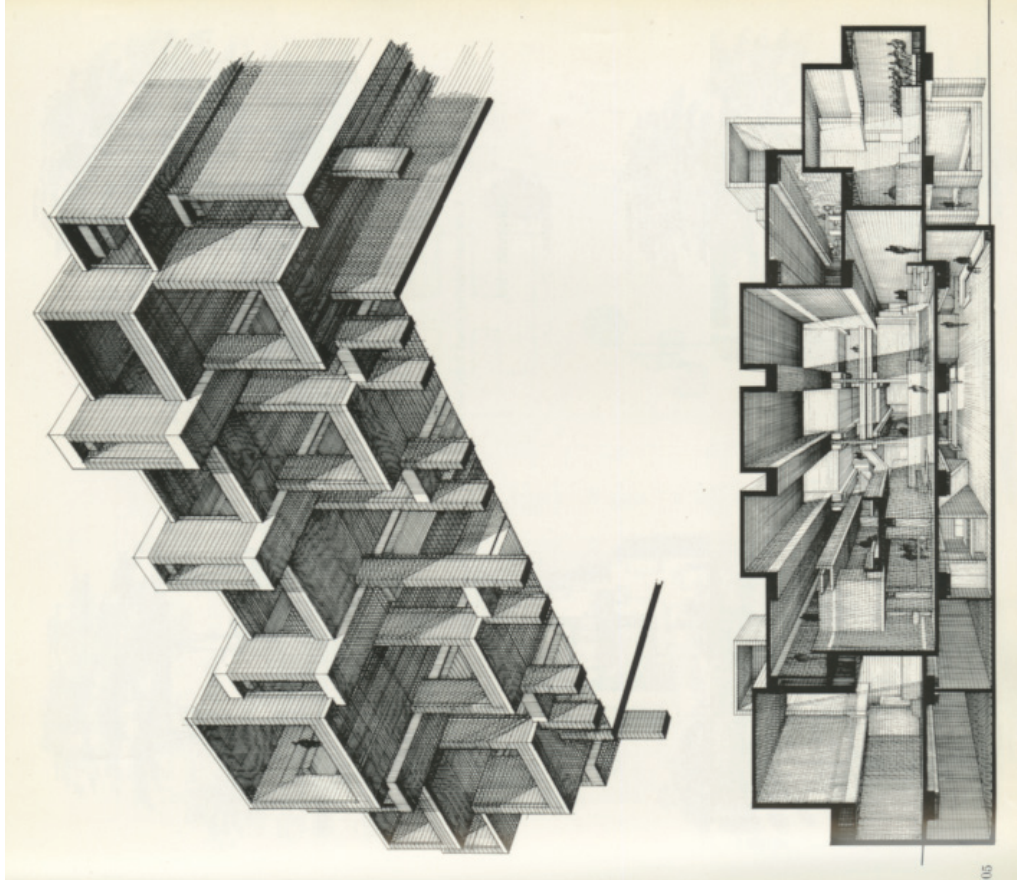


ARCHITECT: PAUL RUDOLPH
STRUCTURAL ENGINEER: LEV ZETLIN ASSOCIATES
MECHANICAL ENGINEER: CARETSKY & ASSOCIATES
ACOUSTIC CONSULTANT: CAMBRIDGE ACOUSTIC CONS.
CONTRACTOR: CORBEAU-NEWMAN CONSTRUCTION CORP.

TOTAL COST: \$5.8 million OR \$34.85/sf
COMPLETED: 1967

PROGRAM: Courts, Government offices, Public records, etc.

STRUCTURE: Poured-in-place concrete frame faced with custom 'Corduroy' CMU on both exterior and interior

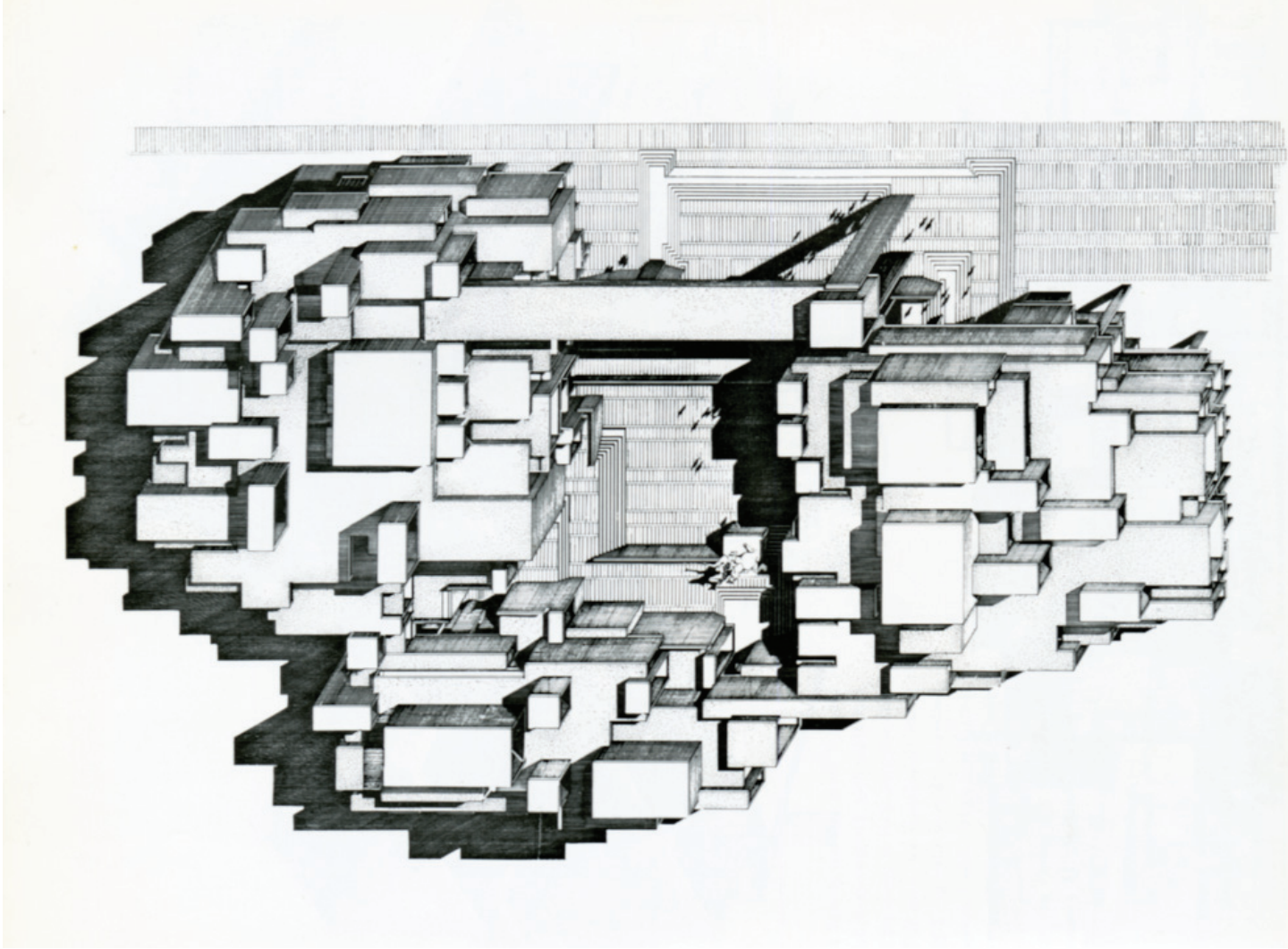


Orange County Government Center

ARCHITECT: **PAUL RUDOLPH**
 STRUCTURAL ENGINEER: **LEV ZETLIN ASSOCIATES**
 MECHANICAL ENGINEER: **CARETSKY & ASSOCIATES**
 ACOUSTIC CONSULTANT: **CAMBRIDGE ACOUSTIC CONS.**
 CONTRACTOR: **CORBEAU-NEWMAN CONSTRUCTION CORP.**

TOTAL COST: **\$5.8 million OR \$34.85/sf**
 COMPLETED: **1967**

- 1970 Severe leaking begins
- 1985 Roofs replaced
Terraced concrete steps removed
Reconfiguration of interior spaces
- 1990's One courthouse deemed unfit for use
EE&K Courthouse addition
- 2000 Roof Condition Survey; Facade repair &
Structural Remediation
- 2002 Conversion of Family courtrooms into offices
- 2004 Exec. Edward Diana pushes for demolition on financial
grounds
- 2011 Flooded & damaged in Hurricane Irene & T.S. Lee
Mold & Fungus Investigation
FEMA Post-Storm Conditions Report
NY SHPO state listing eligibility
National Register of Historic Places eligibility
WMF Worldwide cultural heritage site at risk
- 2012 Report by Jacobowitz & Gubits, LLP
Final Assessment Report by Clark Patterson Lee and
designLAB architects
- 2013 Exploration of schemes to renovate & partially demolish
- 2014 New County Executive Steve Neuhaus elected
designLAB proposal 'approved' by legislature

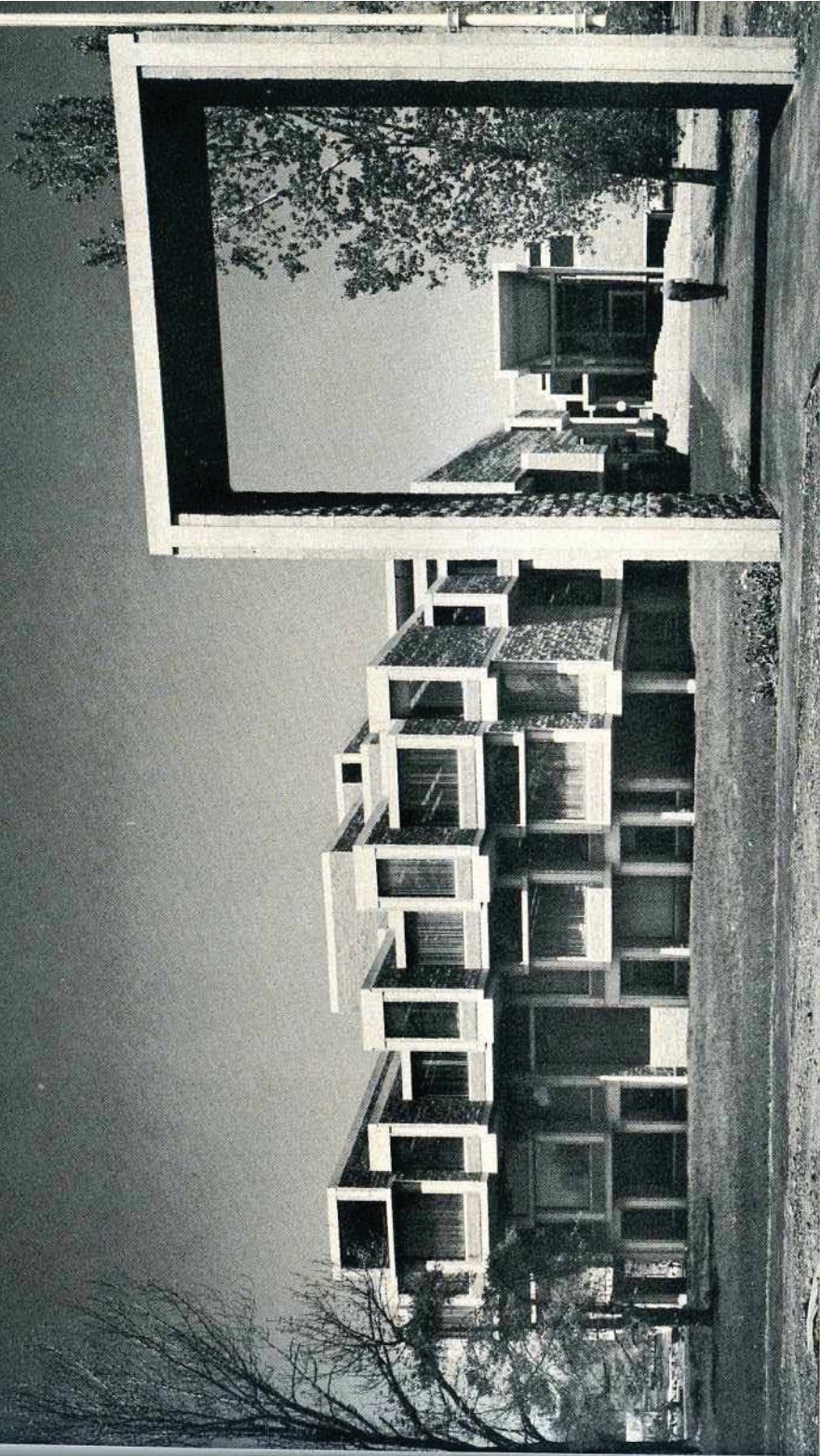


Orange County Government Center



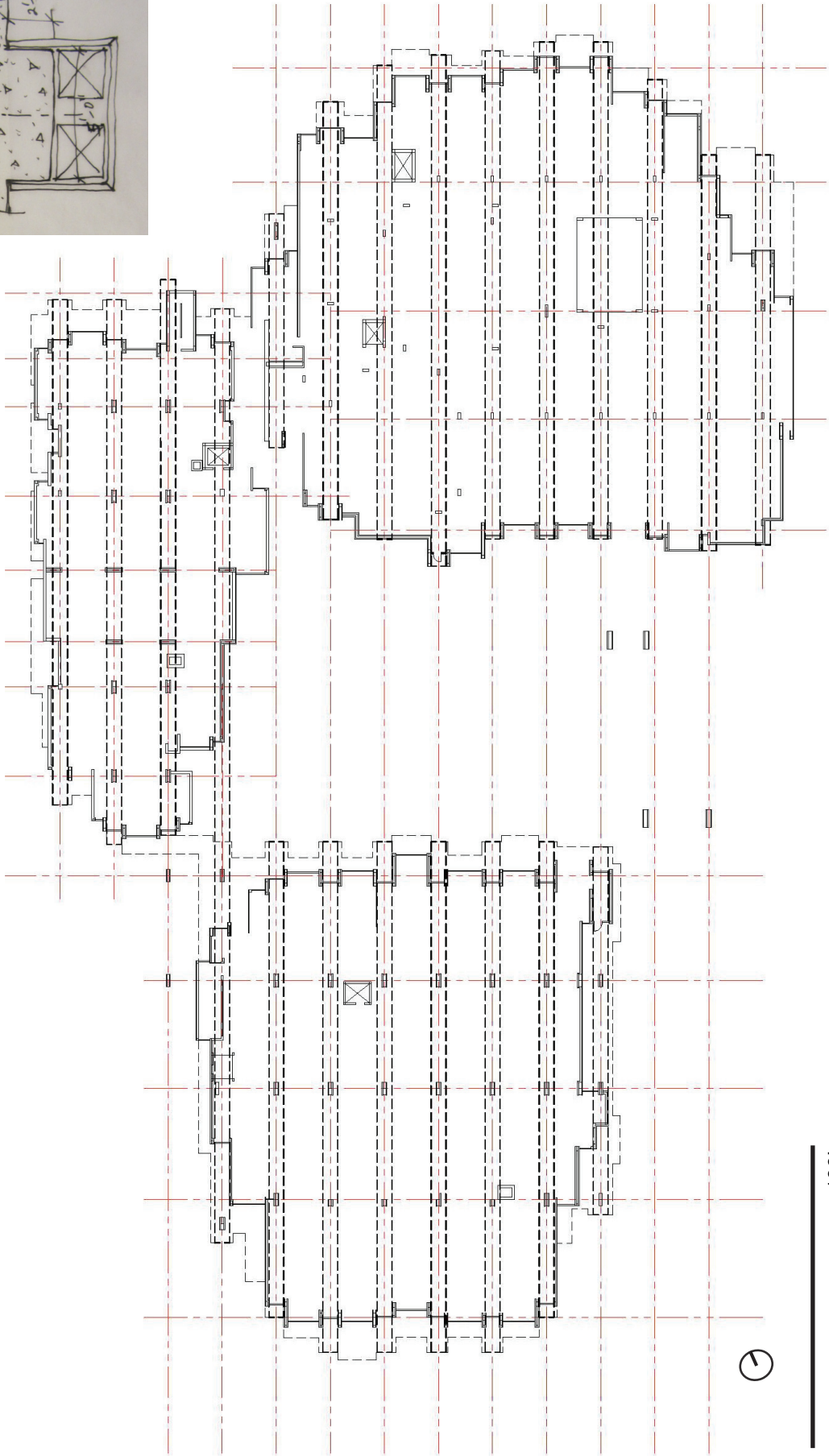
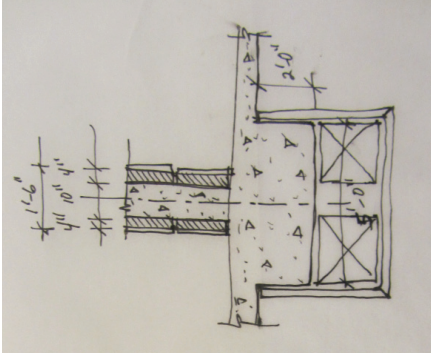
Orange County Government Center - Courtyard

ARCHITECTURAL RECORD AUGUST 1971



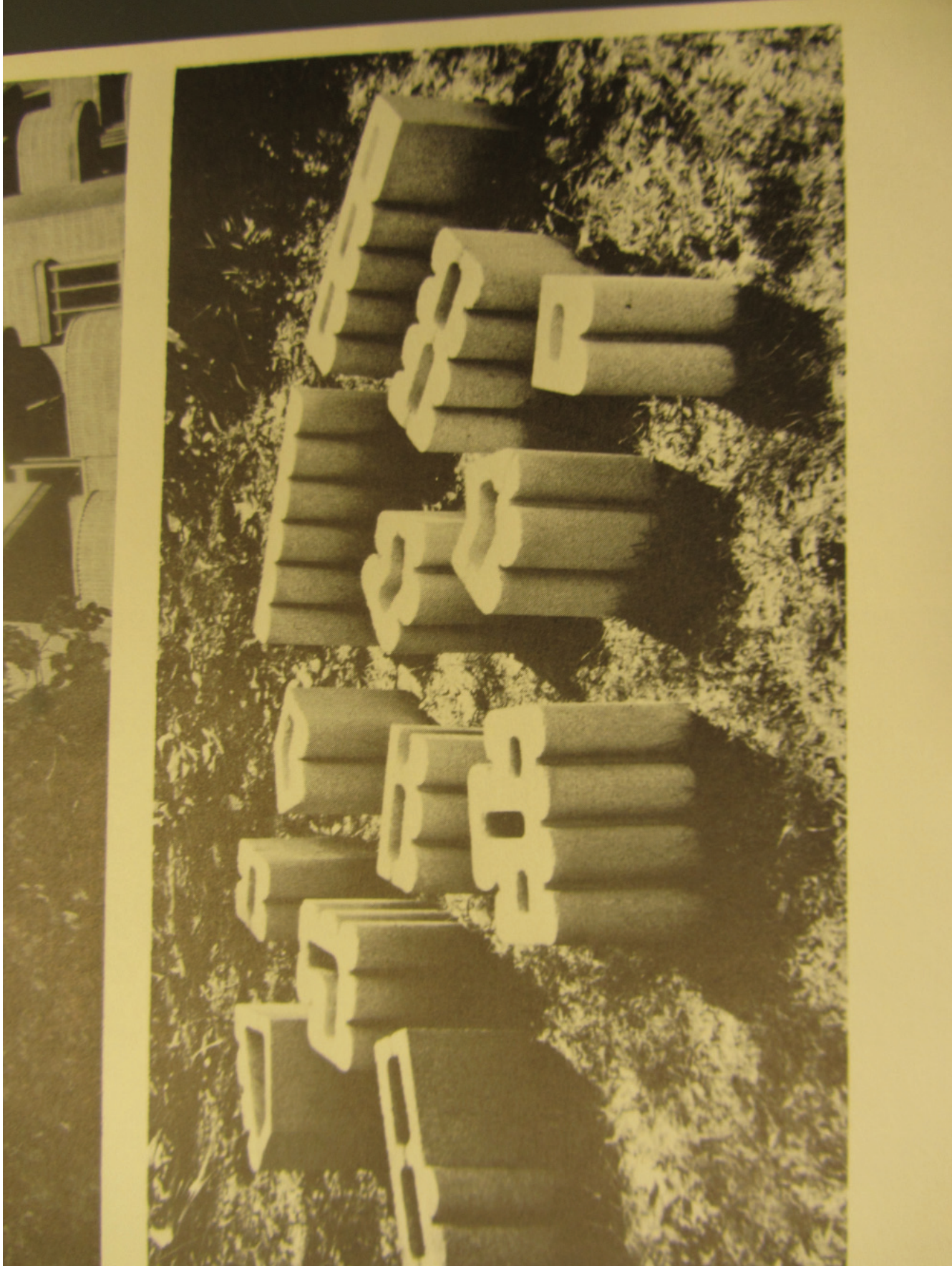
Joseph W. Molitor photos

Orange County Government Center

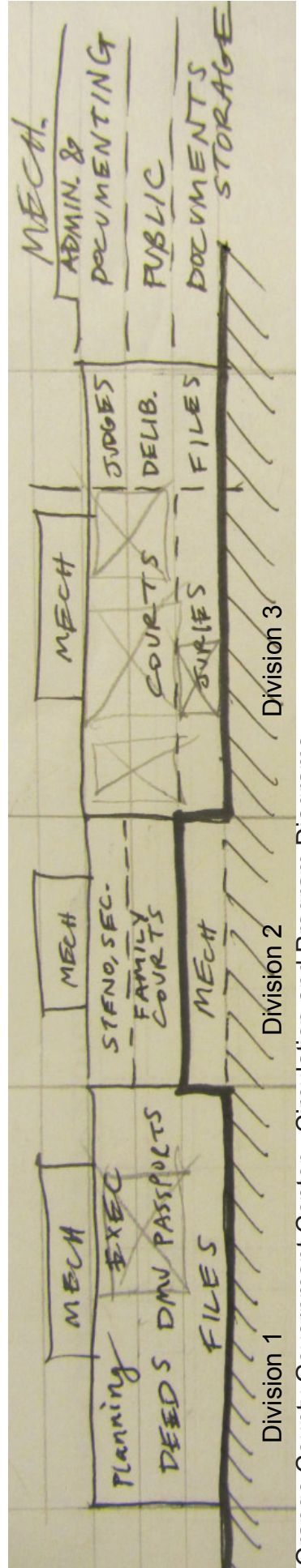
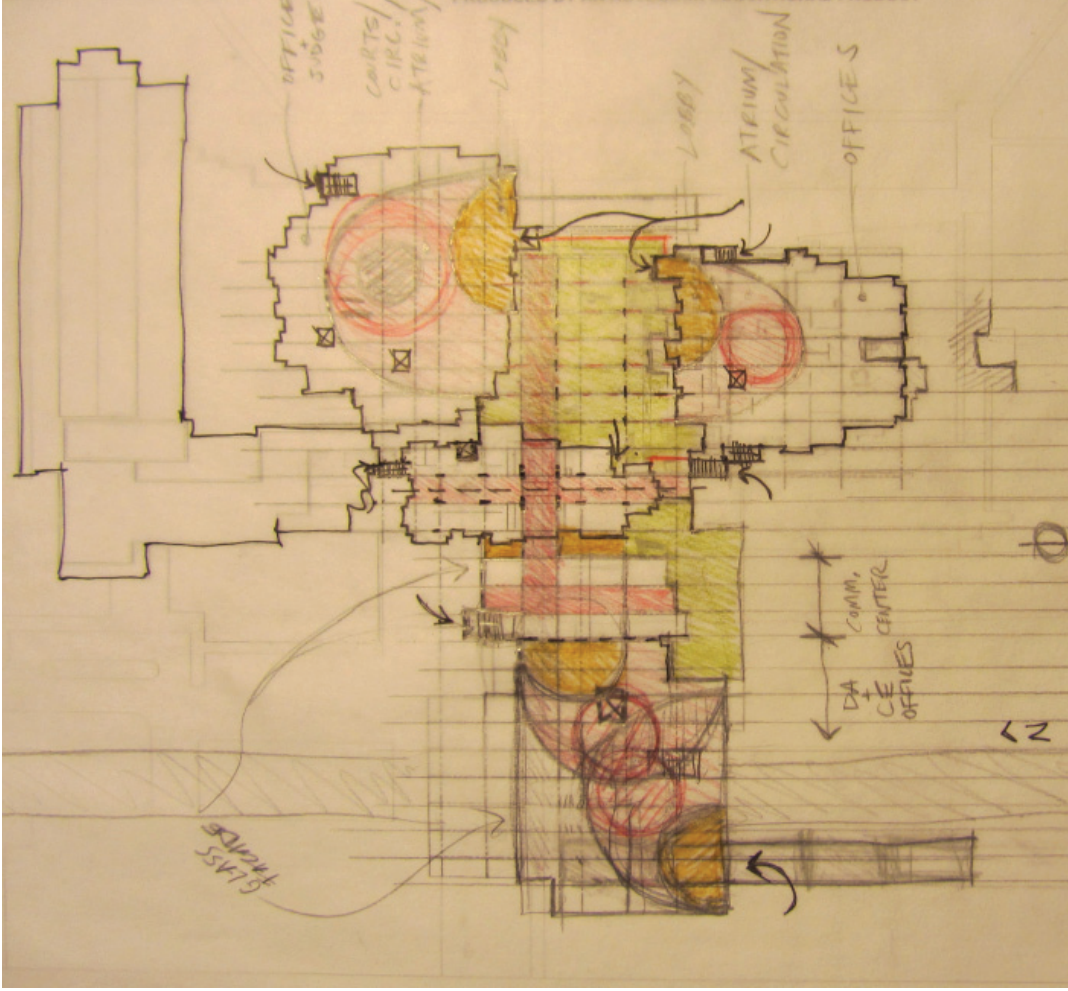


100'

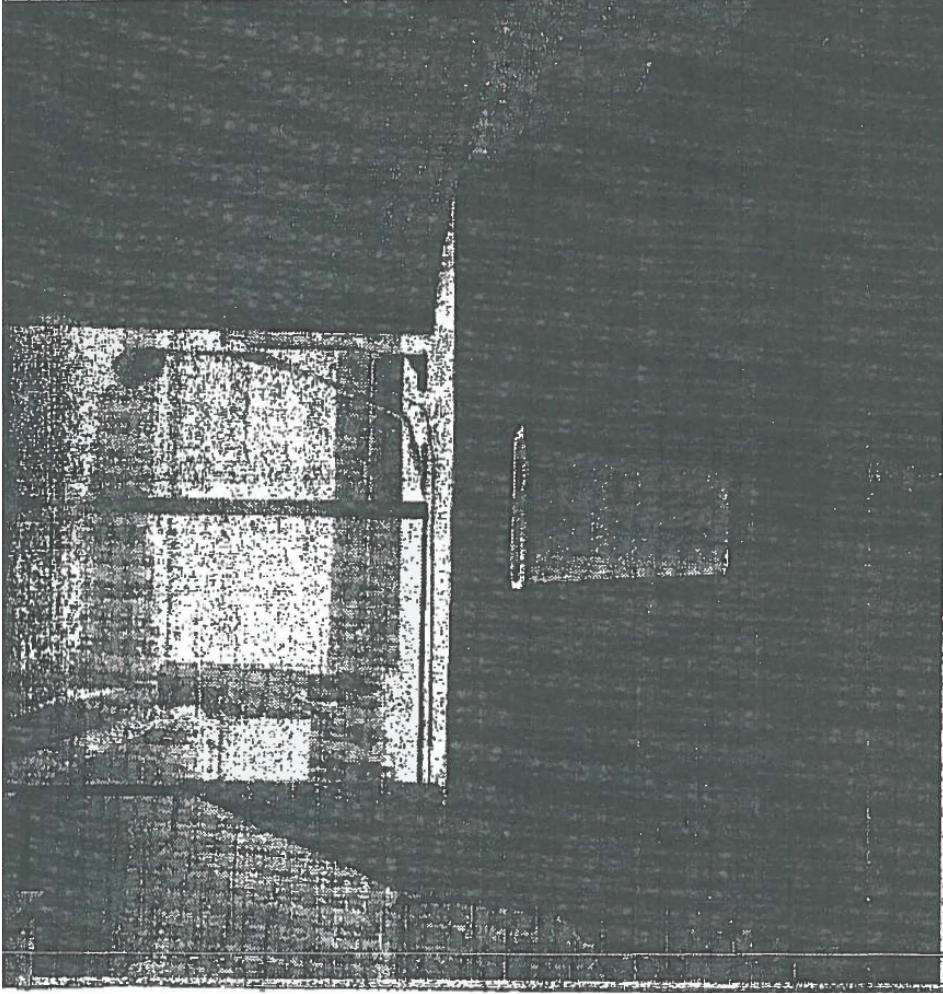
Orange County Government Center - Structural System Diagram



Paul Rudolph's signature 'corduroy' CMU



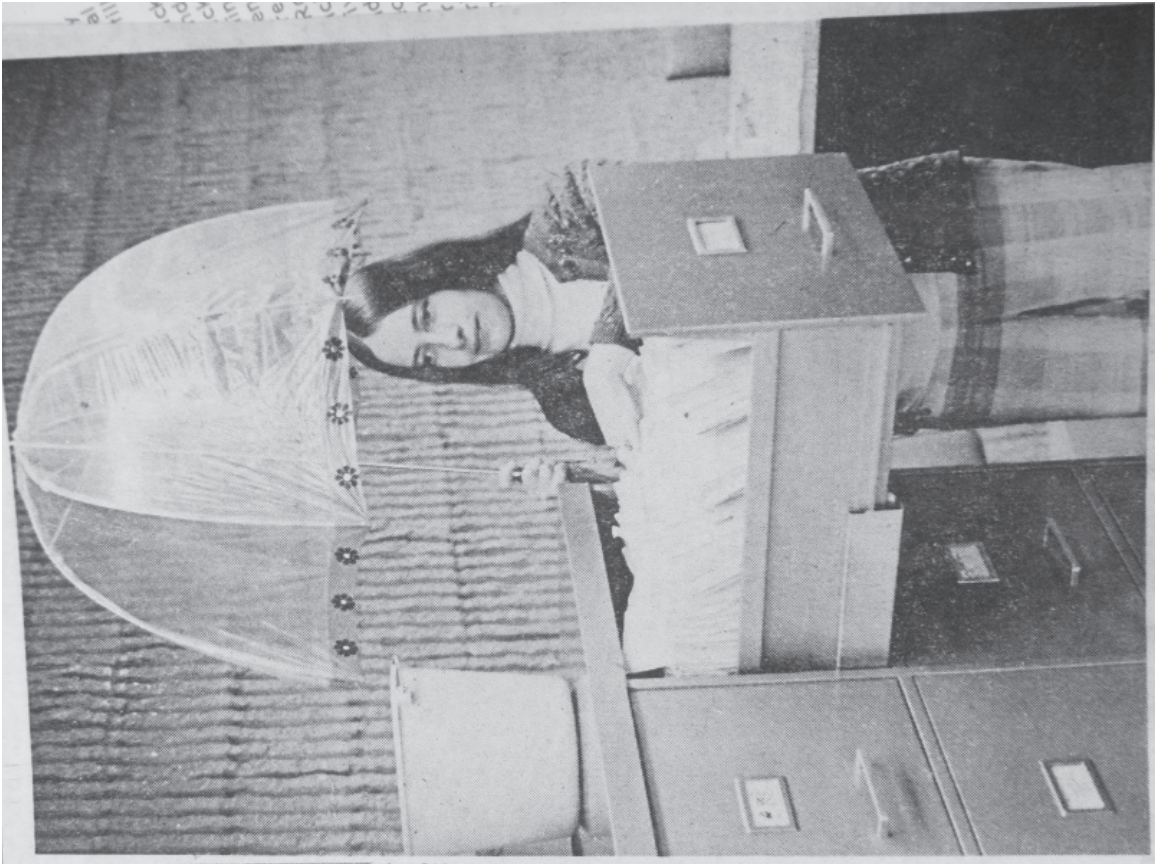
Orange County Government Center - Circulation and Program Diagrams



A partman uses a vacuum cleaner to suck up water that leaked through the roof apparently from a pipe in the lounge of the Orange County Government Center. A wide area in the lounge was soaked by the leak.

County center springs a leak, offices, courtroom chamber soaked

By Robert Currah



JOANN COONS KEEPS DRY AT COUNTY CENTER ... bucket at left is for drips

Photo by Robert Currah



Orange County Government Center - Water Infiltration and Structural Repairs

Mills: Orange government center bulging at seams

Close-up
Taxpayers, nature remodel Orange County Center



P.M.R.
RE: ORANGE COUNTY
MR. MILLS (COUNTY EXEC.) ASKED PETER GARRISON (COUNTY PLANNER) TO CALL US REGARDING A FUTURE ADDITION TO THE CENTER. PLANNING WOULD NOT START UNTIL AFTER ELECTION (NOV. 1973).
QUESTION WAS: CAN BUILDING BE ENLARGED UPWARD?
ANSWER: (1) YES PROBABLY BUT WITH A DIFFERENT KIND OF STRUCTURE OF LIGHTER MATERIALS, MAY SUFFER NATURAL LIKE
(2) A SEPARATE BUT ATTACHED BUILDING COULD BE CONNECTED TO NORTH - SOUTH - EAST OR WEST SIDES.
(3) A LEAN - TO COULD BE ADDED TO WINDOWLESS SIDES. (EAST & WEST) BUT ALL THIS WOULD DEPEND ON SPACE REQMTS & PROXIMITY WITH EXISTING FACILITIES.
INFORMED GARRISON I WOULD RELATE HIS QUESTION TO YOU & ADVISE IF YOU DISAGREED WITH ABOVE ANSWERS
JMB

d \$4.6 million center for
 ill masses would present
 and character of existing

buildings in Goshen. Wing at left
 courts at right, and family
 court in wing at rear of center
 courtyard.

BY C. BOEHM ROSA

GOSHEN — The Orange County Board of Supervisors had a look at preliminary plans Friday night for a three-wing, three-story county center building to house court and county

administrative offices on Main Street site of the former Interpines Sanatorium. The board will be asked to authorize detailed plans which would amount to approval of the 20th century modern sign plan unveiled yesterday by Architect Paul Rudolph of New York.

Last April 9 the supervisors sanctioned a \$4,600,000 resolution for the project. Mr. Rudolph said he made no fair estimate until working drawings were further advanced.

At the architect's estimate of \$30 a square foot for the building's 145,881 square floor area, the construction could amount to \$4,375,000.

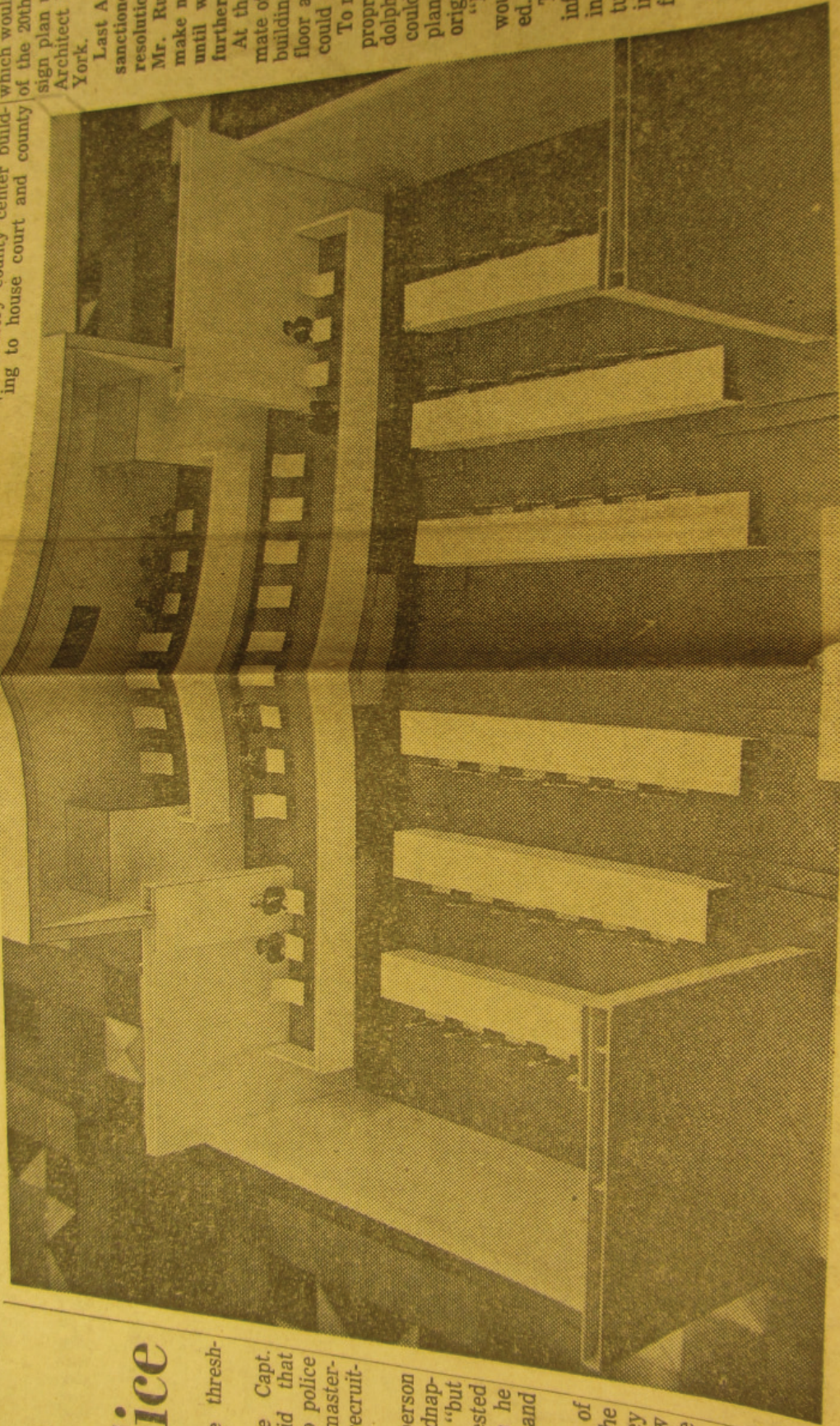
To remain safely under appropriation, however, Rudolph said 10,000 square feet could be pared from the plans to cut the building's original proposal.

"But in terms of cost, it would be drastic," he said.

The supervisors were given information only, Rudolph said, showing a picture of many rooms and forms of varying sizes.

Mr. Rudolph said the exterior of the building would be outside the front and back inside. He said he would show representative photographs of building techniques developed from the past.

Supervisors will meet this week to discuss the project. The school board will meet next week.



SUPERVISORS' CHAMBERS — Architect's model shows design for Board of Supervisors' chambers in proposed new county center. Cutout figures shown sit in spectators' gallery at far end of chamber. In foreground would be desk for chairman,

Photo by Rosa

clerk and county attorney. The 36 other supervisors would sit on either side of the room in banked tiers. Press table would be underneath balcony.

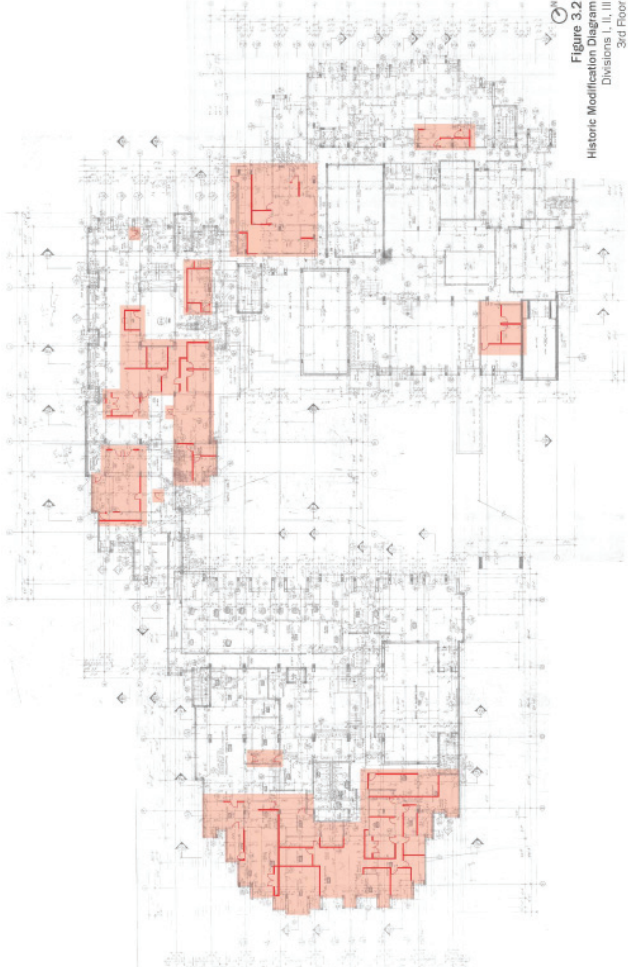
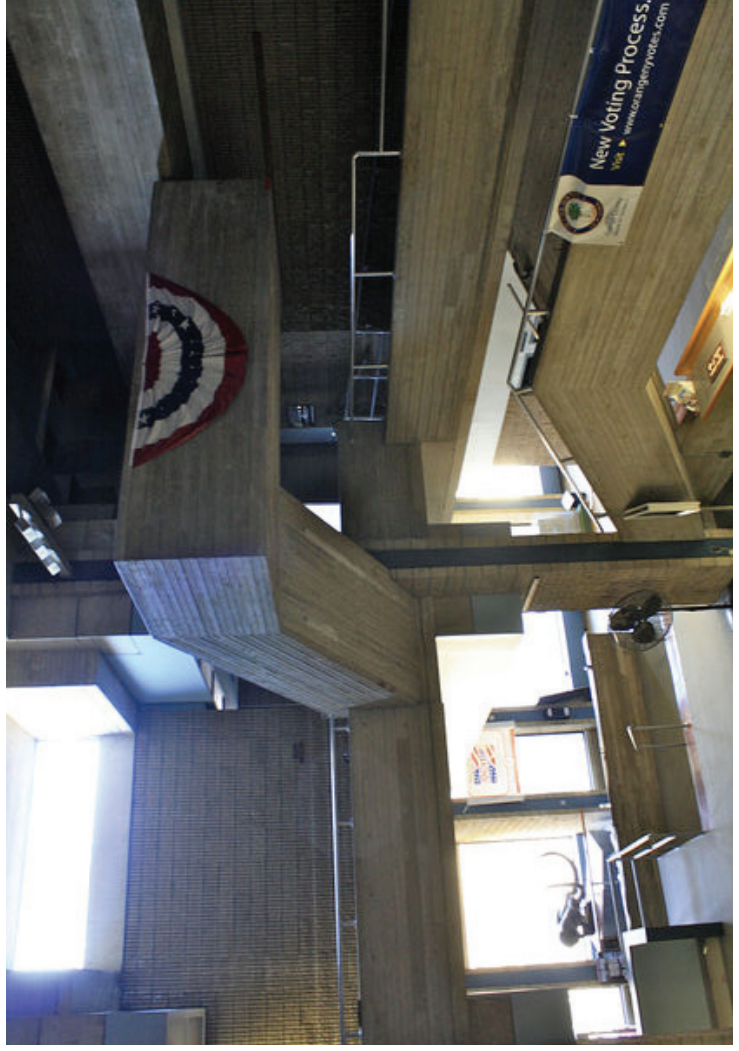
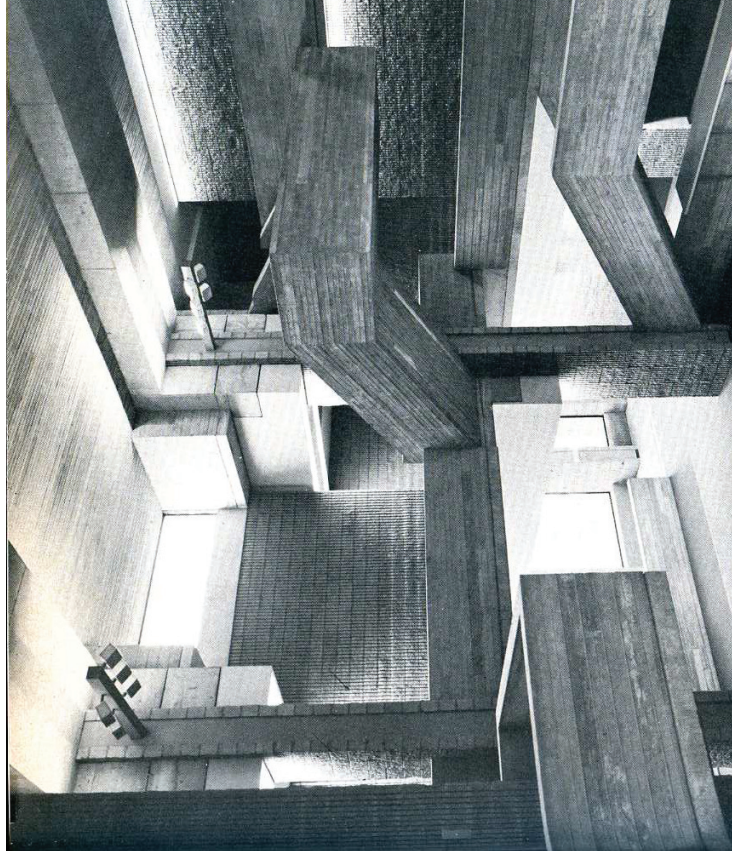
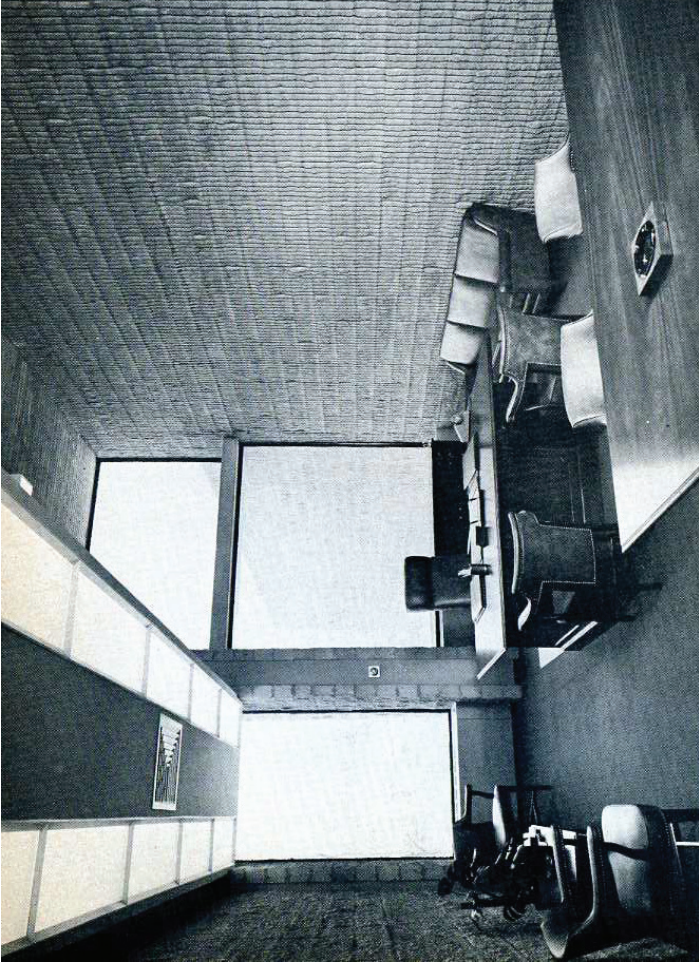


Figure 3.2
Historic Modification Diagram
Divisions I, II, III
3rd Floor

designLAB architects



Orange County Government Center - Modifications to Interior



Orange County Government Center - Modifications to Interior





Figure 2.1
 Building Circulation Diagram
 Divisions I, II, III
 2nd Floor

designLAB architects



Orange County Government Center - Diagram of varying floor levels and wheelchair lifts for handicap accessibility

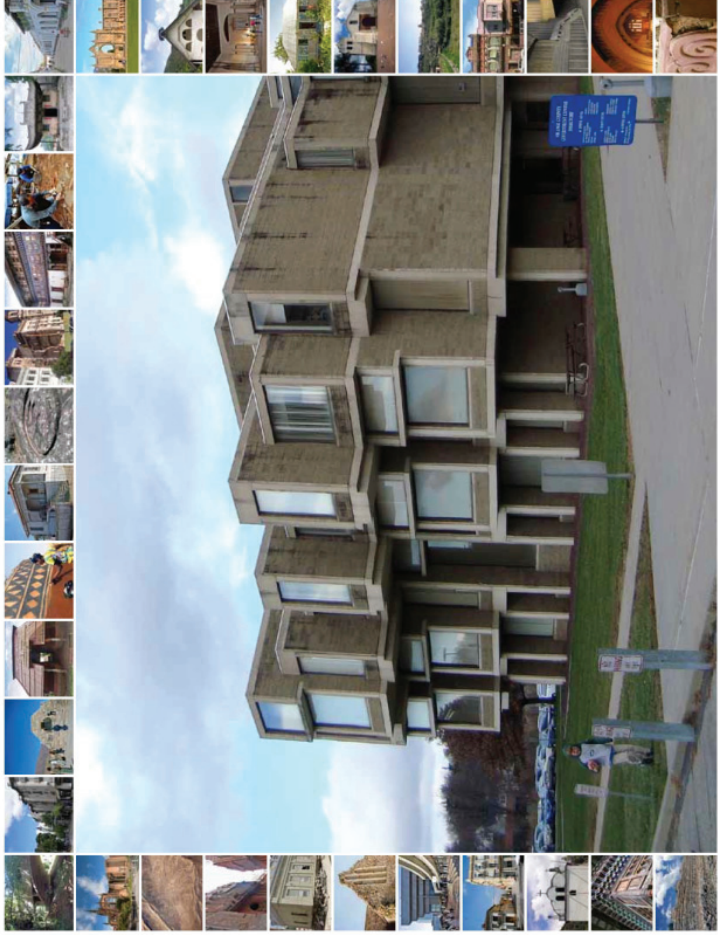


Orange County Government Center - Site Drainage System

Clark Patterson Lee - Condition Report



Orange County Government Center - Early design proposal for replacement of Orange County Government Center



ORANGE COUNTY GOVERNMENT CENTER
Goshen, New York, United States

is on the

**2012
WORLD MONUMENTS
WATCH**



WORLD
MONUMENTS
FUND

SPONSOR

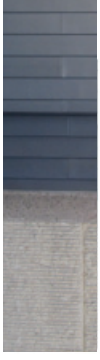


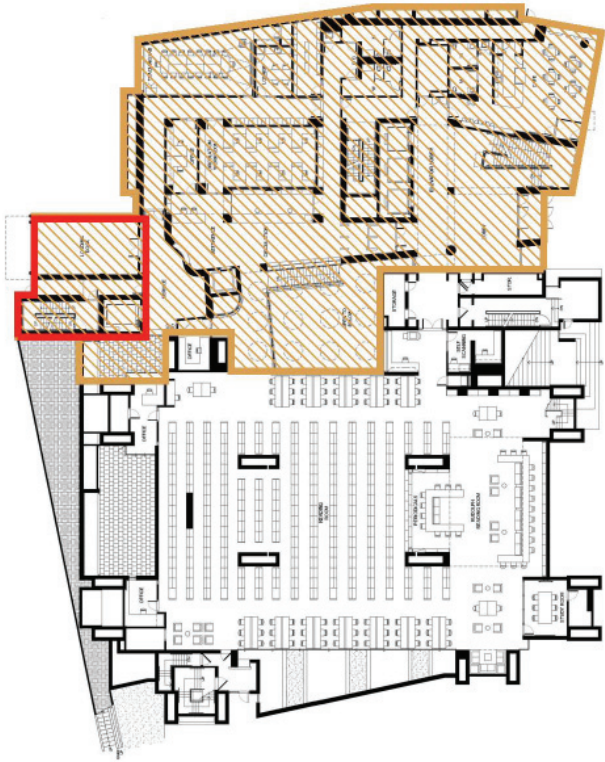
wmf.org/watch



Orange County Government Center - Grassroots campaign to save building



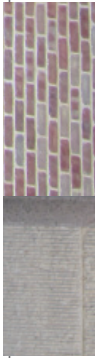
Scope	Addition Interior Renovation
Issues Addressed	Expansion A.D.A. Mechanical system upgrade
Site Strategy	Adjacent expansion / doubled Minimal demolition
Materiality	 Bush-hammered 'corduroy' poured-in-place concrete Vertically oriented zinc panels
Strengths	Sensitive Interior renovation Solves technical issues

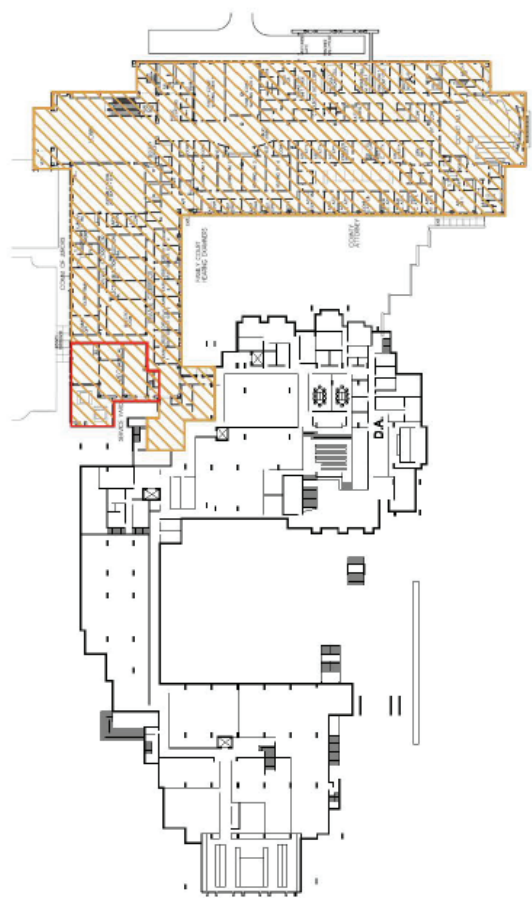


Gwathmey Siegel architects - Yale University, Rudolph Hall and Loria Center

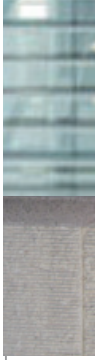


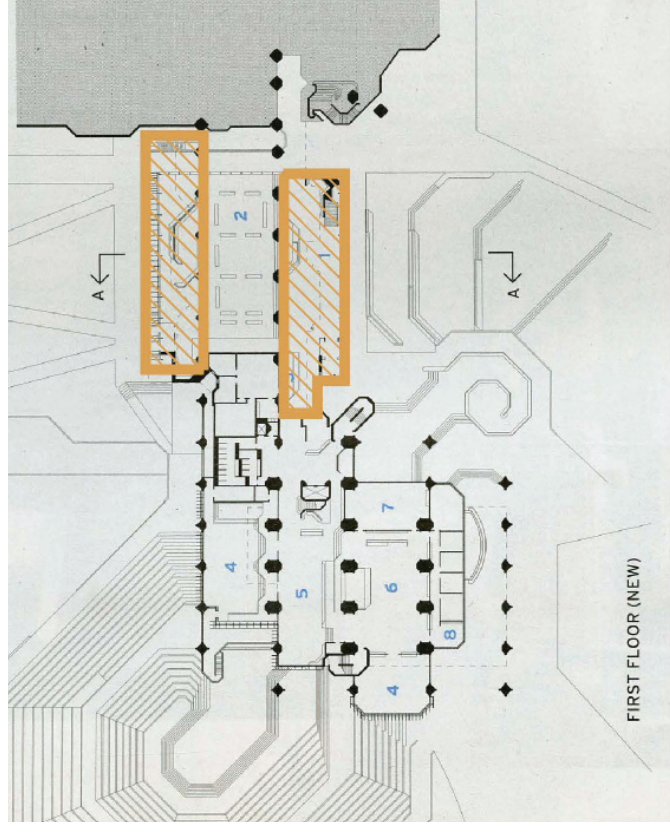
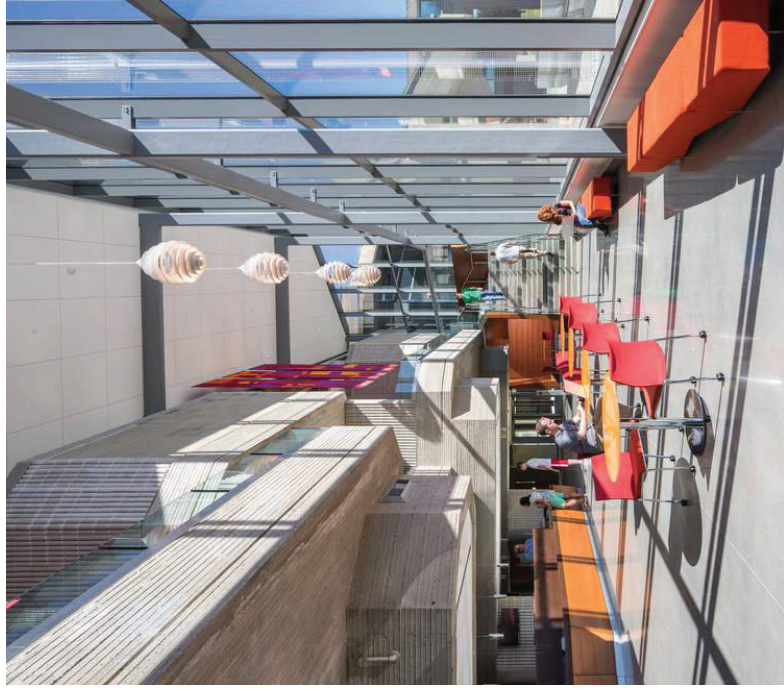
E,E&K architects - Orange County Courthouse

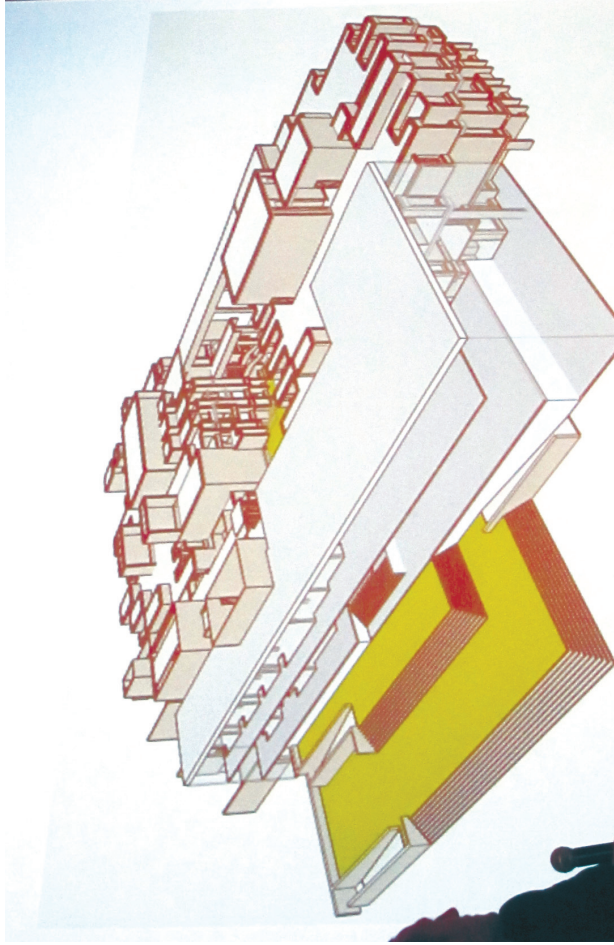
Scope	Addition Gut Renovation
Issues Addressed	Expansion Aesthetic
Site Strategy	Minimal engagement Minimal Demolition
Materiality	 <p>'Corduroy' CMU & poured-in-place concrete Red 'town' brick; Glass & Aluminum curtain wall</p>
Assessment	Little engagement Prioritizes contextuality




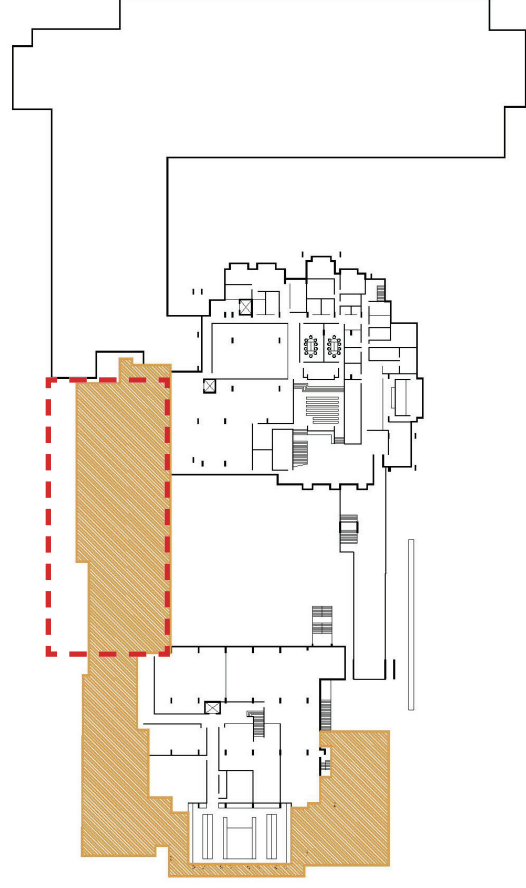


Scope	Addition Gut Renovation
Issues Addressed	Aesthetic Interior spatial reconfiguration
Site Strategy	Wrap / Neutralize Extensive Demolition
Materiality	 Bush-hammered 'corduroy' poured-in-place concrete Glass & Aluminum curtain wall Neutralizes formal dynamism

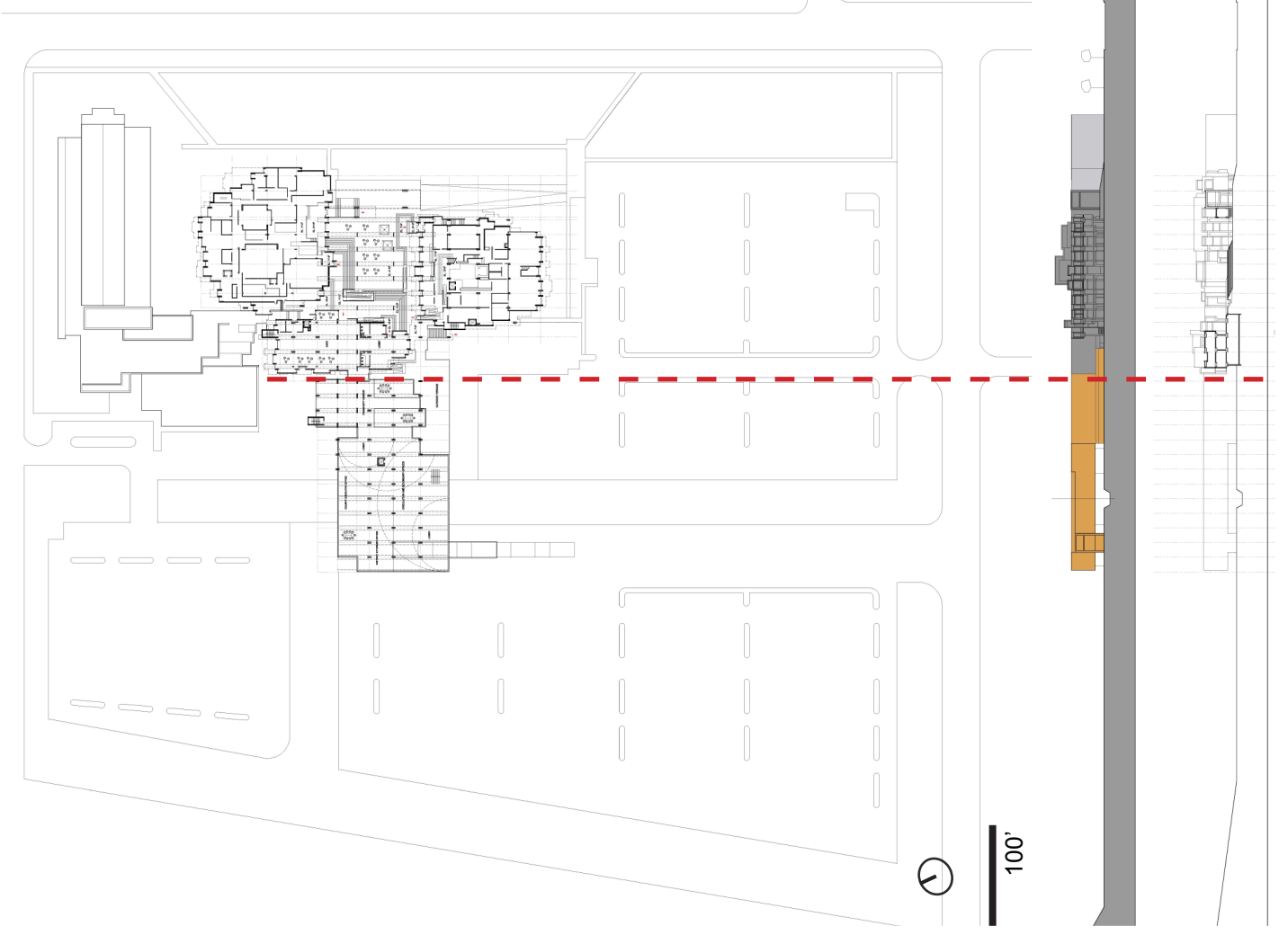




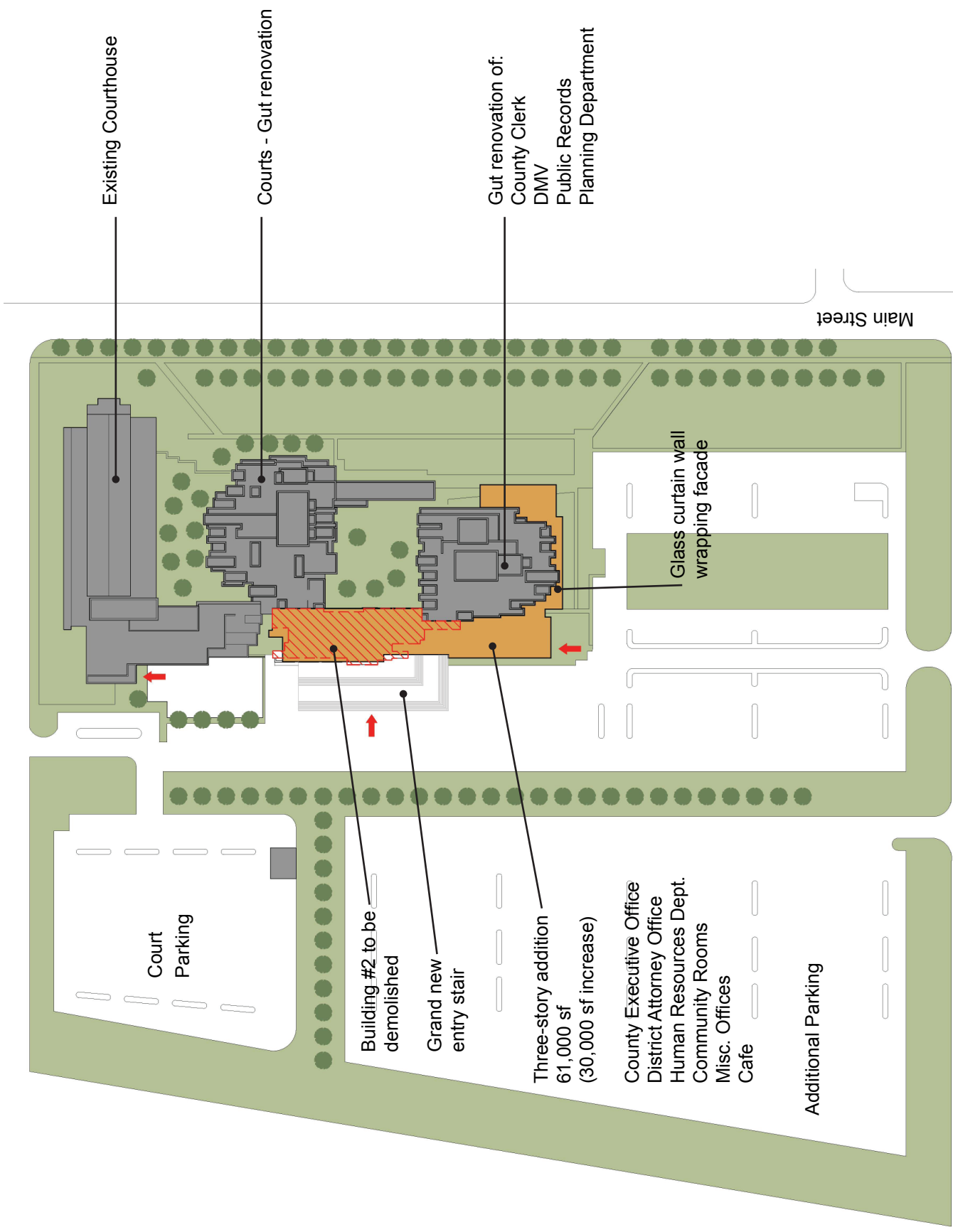
Scope	Addition Gut Renovation
Issues Addressed	Aesthetic / Local perception Expansion Spatial Reconfiguration
Site Strategy	Extensive Demolition Encapsulate
Materiality	 'Corduroy' CMU & poured-in-place concrete Glass & Aluminum curtain wall
Assessment	Neutralizes formal dynamism Excessive demolition Reorients to back of site



designLAB architects - preliminary proposal for Government Center presented to Orange County



Orange County Government Center - Site Strategy and views of West Elevation



Existing Courthouse

Courts - Gut renovation

Gut renovation of:
County Clerk
DMV
Public Records
Planning Department

Glass curtain wall
wrapping facade

Court
Parking

Building #2 to be
demolished

Grand new
entry stair

Three-story addition
61,000 sf
(30,000 sf increase)

County Executive Office
District Attorney Office
Human Resources Dept.
Community Rooms
Misc. Offices
Cafe

Additional Parking

Main Street



IDENTIFY FORCES

External Forces Social / Cultural / Health

Aesthetically out-of-fashion
Recent Past - Not yet accrued age value

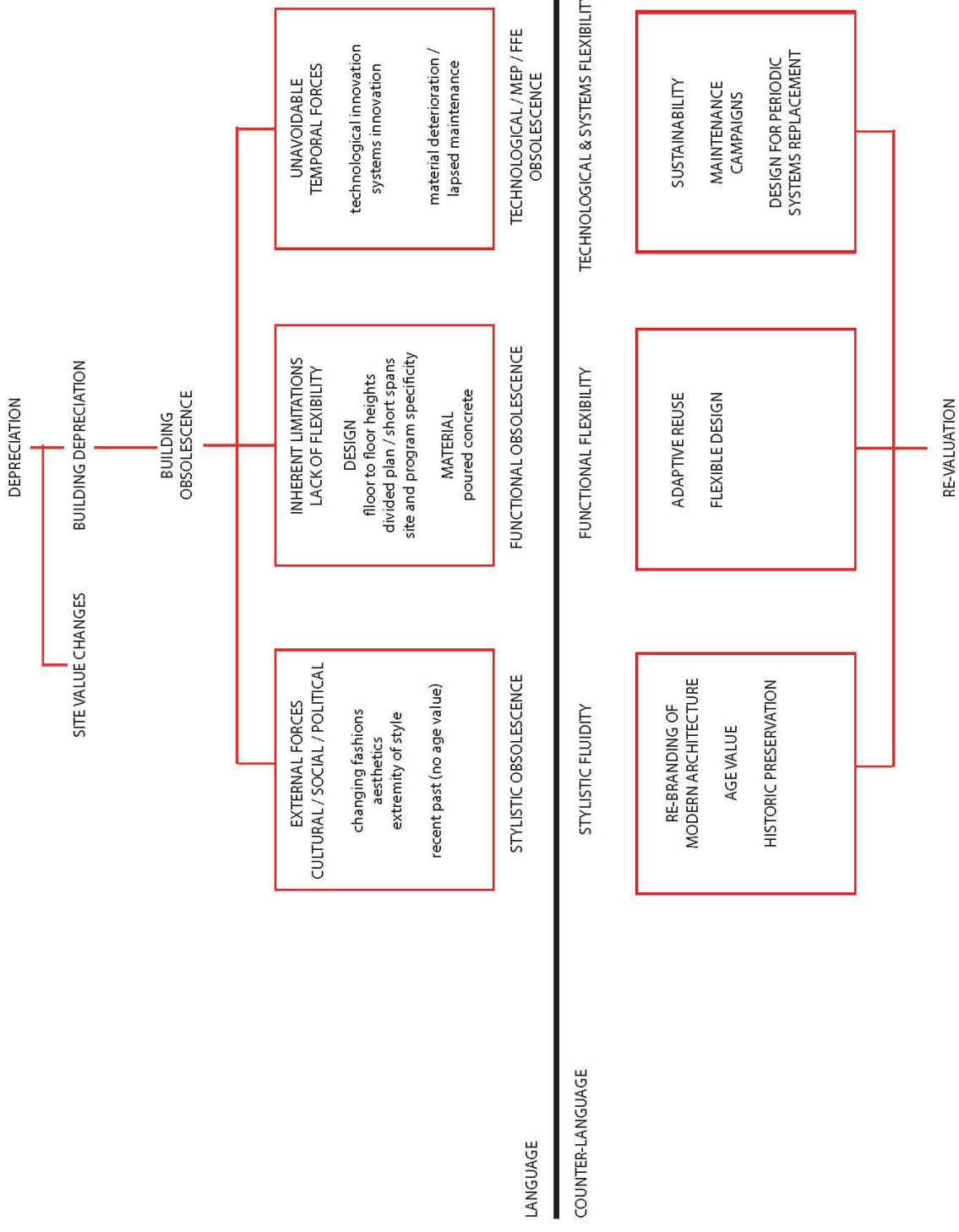
Unavoidable External / Temporal Forces Technological Obsolescence

MEP Systems
FFE
Program-specific equipment (ie. medical equip.)
Program-specific technology

Intrinsic Limitations to Flexibility Physical / Spatial / Material

Floor to Floor heights low
Small windows - less sunlight & air than expected today
Over-determined spatial organization in plan
Multiple floor levels
Reinforced concrete frame

DEVELOPING A COUNTER-LANGUAGE



DEVELOPING A COUNTER-LANGUAGE

DEVELOPING a DESIGN METHODOLOGY for ADAPTING and ADDING to MODERNIST ARCHITECTURE

ADAPTING

1. RESPONDING TO INTRINSIC ELEMENTS

HIGHLIGHT STRENGTHS, STRENGTHEN WEAKNESSES and EMBRACE / TRANSFORM FAILURES

2. RESPONDING TO EXTERNAL / TEMPORAL FORCES

RESPECT EXISTING TECTONICS / DESIGN LOGIC and ADAPT MINIMALLY

ADDING

1. RESPONDING TO INTRINSIC ELEMENTS

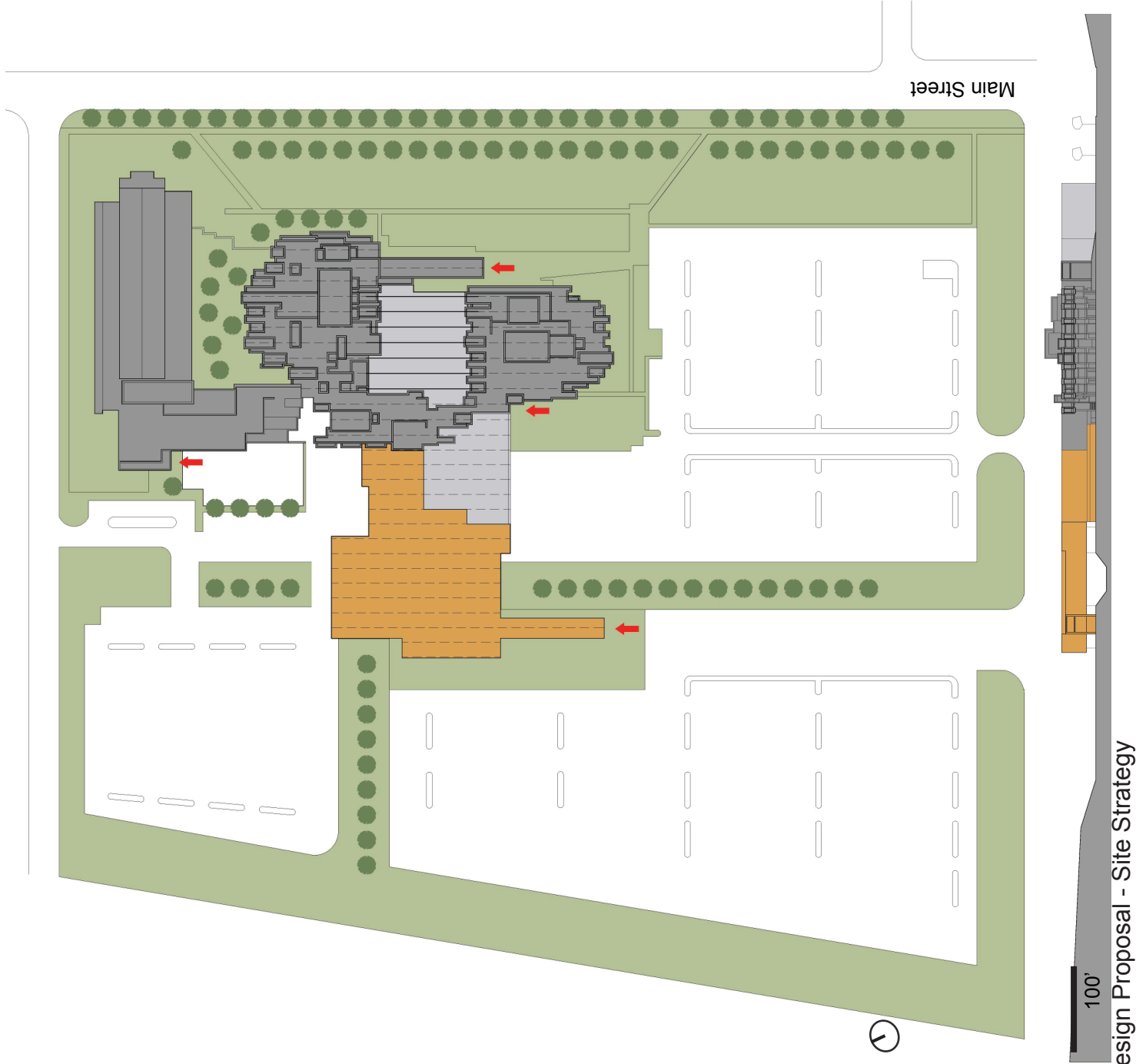
ANTICIPATE FUTURE NEEDS for EXPANSION & RECONFIGURATION by EMPHASIZING FLEXIBILITY of ADDITION

2. RESPONDING TO EXTERNAL / TEMPORAL FORCES

RESPOND to EXISTING LOGIC APPROPRIATELY

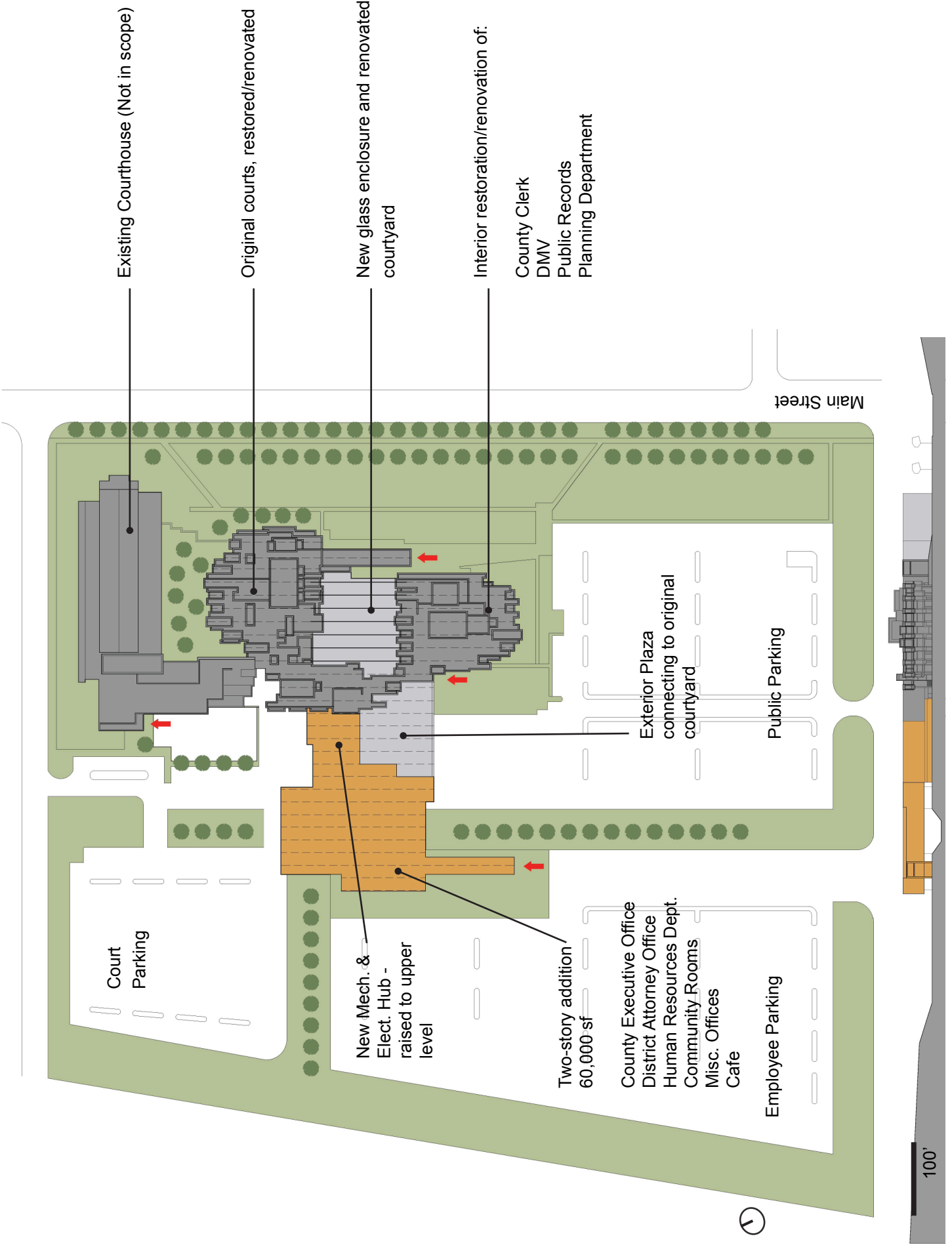
Aims:

1. Reinstate original main entrance
2. Re-establish courtyard as 'heart' of site
3. Strategize for future expansion across ravine
4. Address flooding & drainage



Design Proposal - Site Strategy

Proposed Site Strategy

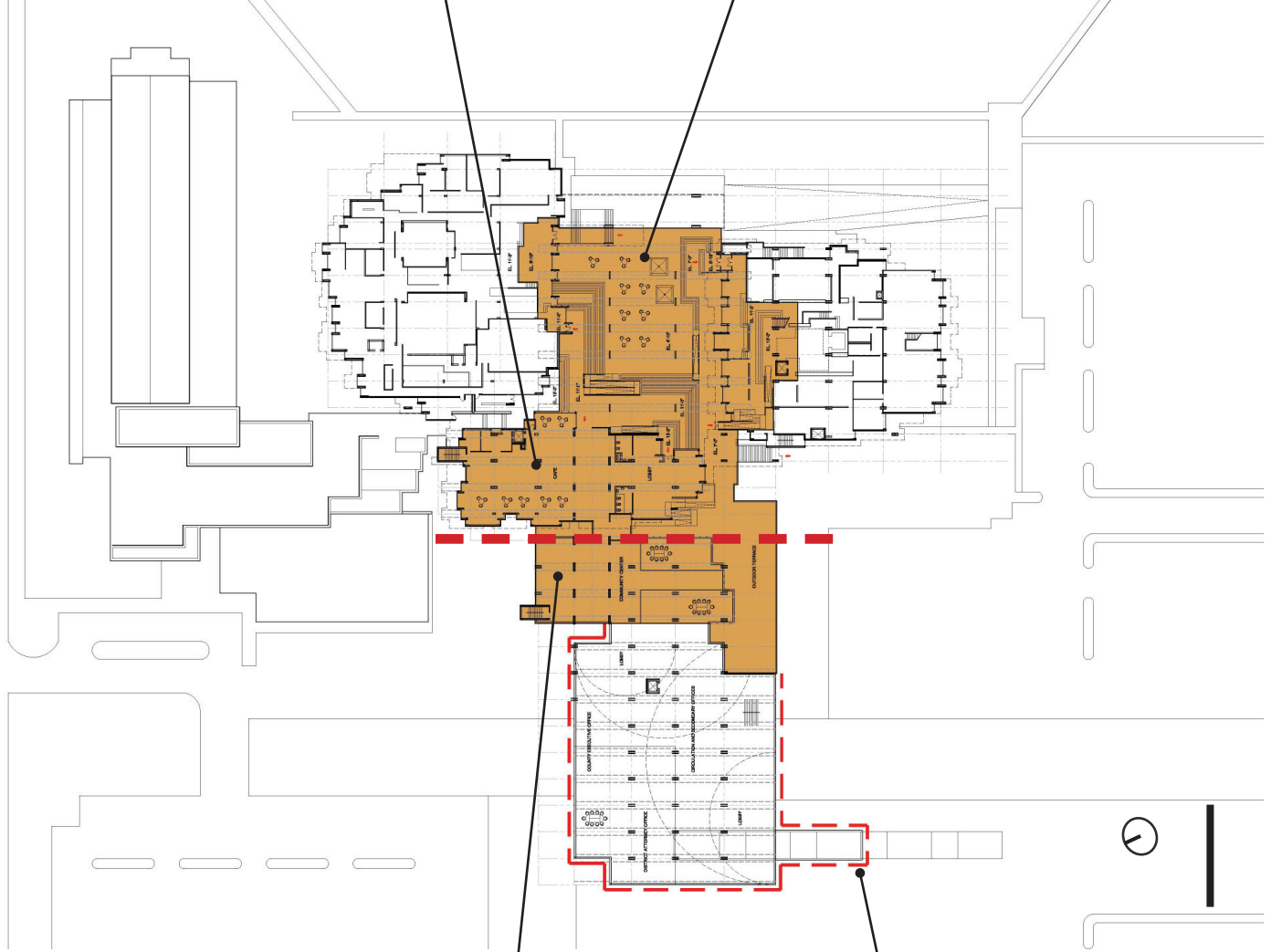


Original Rudolph Courtyard



Courtyard at Smithsonian, Foster + Partners





Seam & Expansion

Issues Addressed:

- New Program
- Adaptability of new interior
- Interpreting Rudolph principles

Drawings:

- Plan & Sections

Addition Exterior

Issues Addressed:

- Aesthetics
- Formal Language
- Materiality

Drawings:

- Elevations
- Perspective

Division 2

Issues Addressed:

- Adapting existing to new program

Drawings:

- Plan & Sections

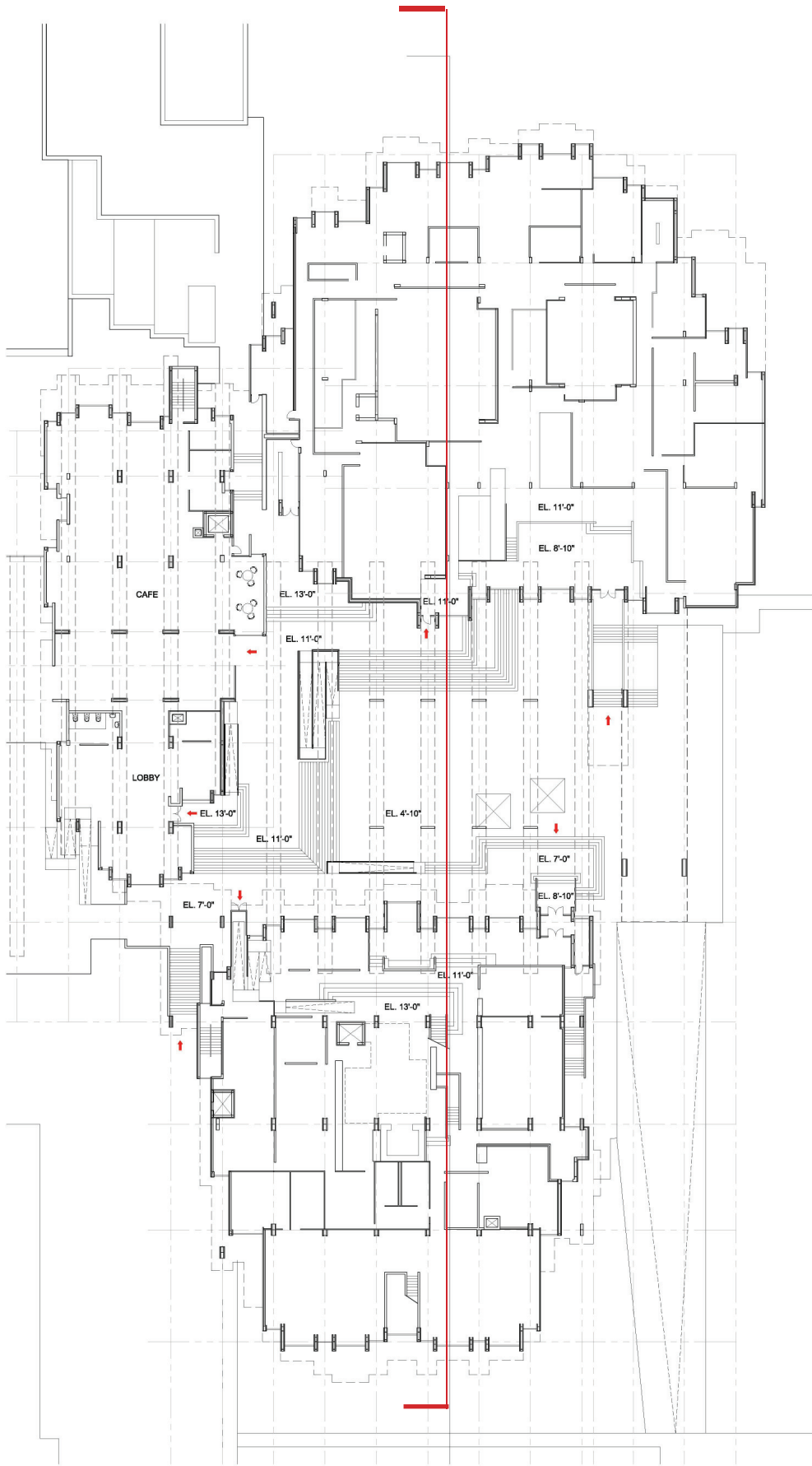
Courtyard & Entry Areas

Issues Addressed:

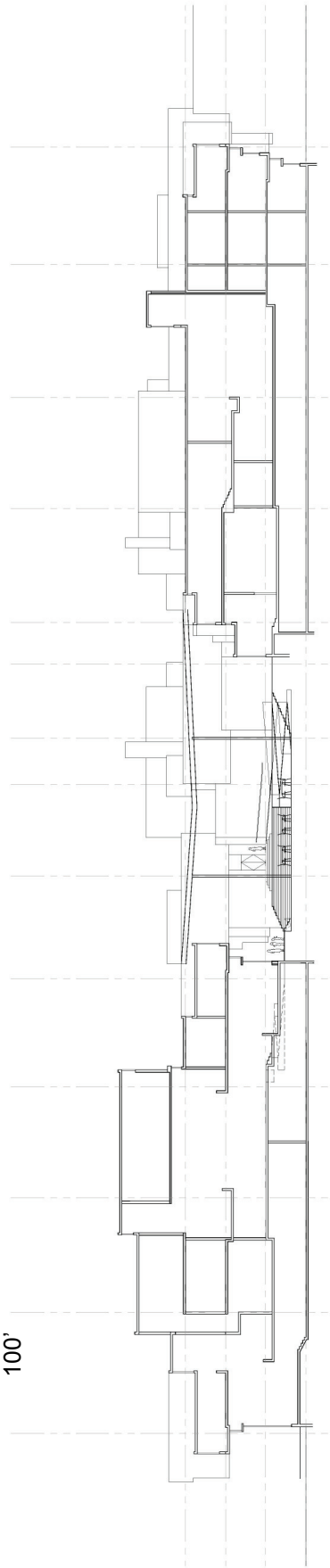
- ADA
- Courtyard Enclosure & renovation

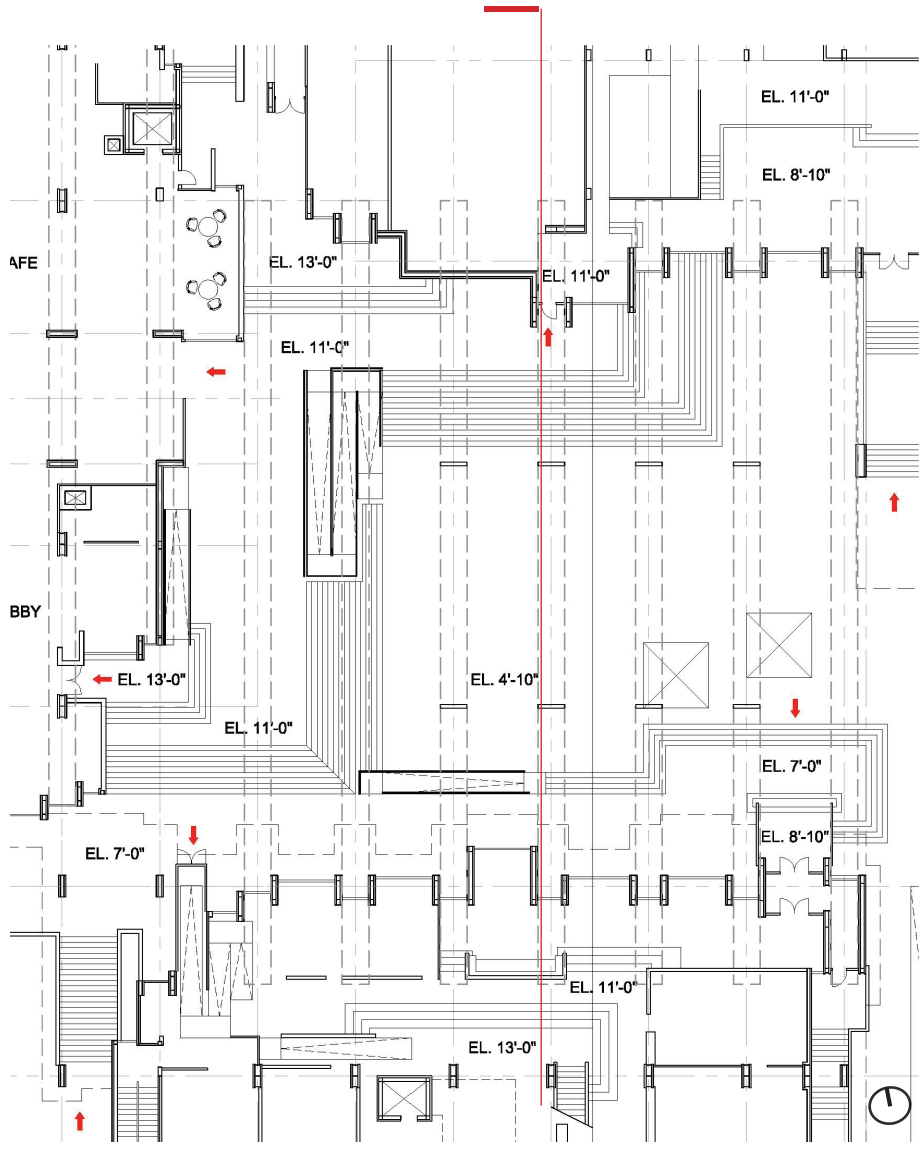
Drawings:

- Plan & Sections
- Interior Perspective

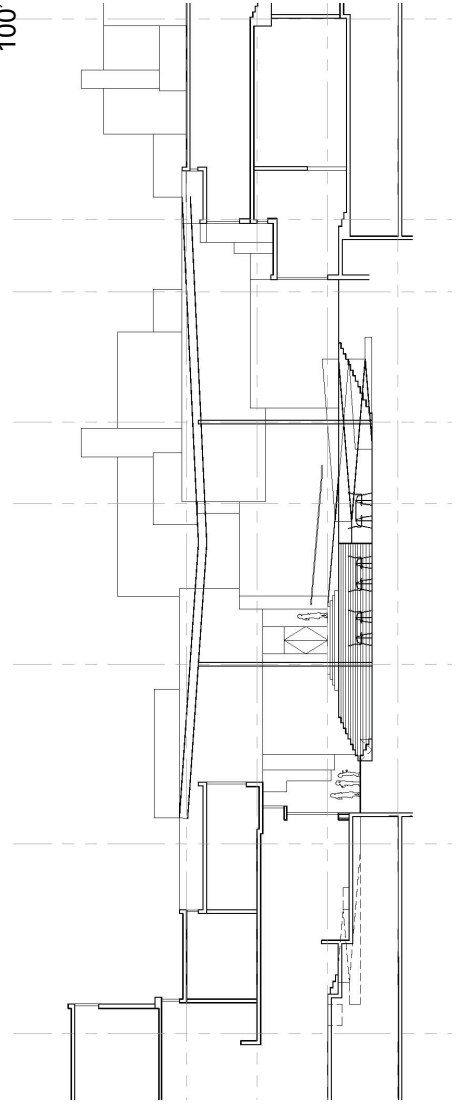


100'

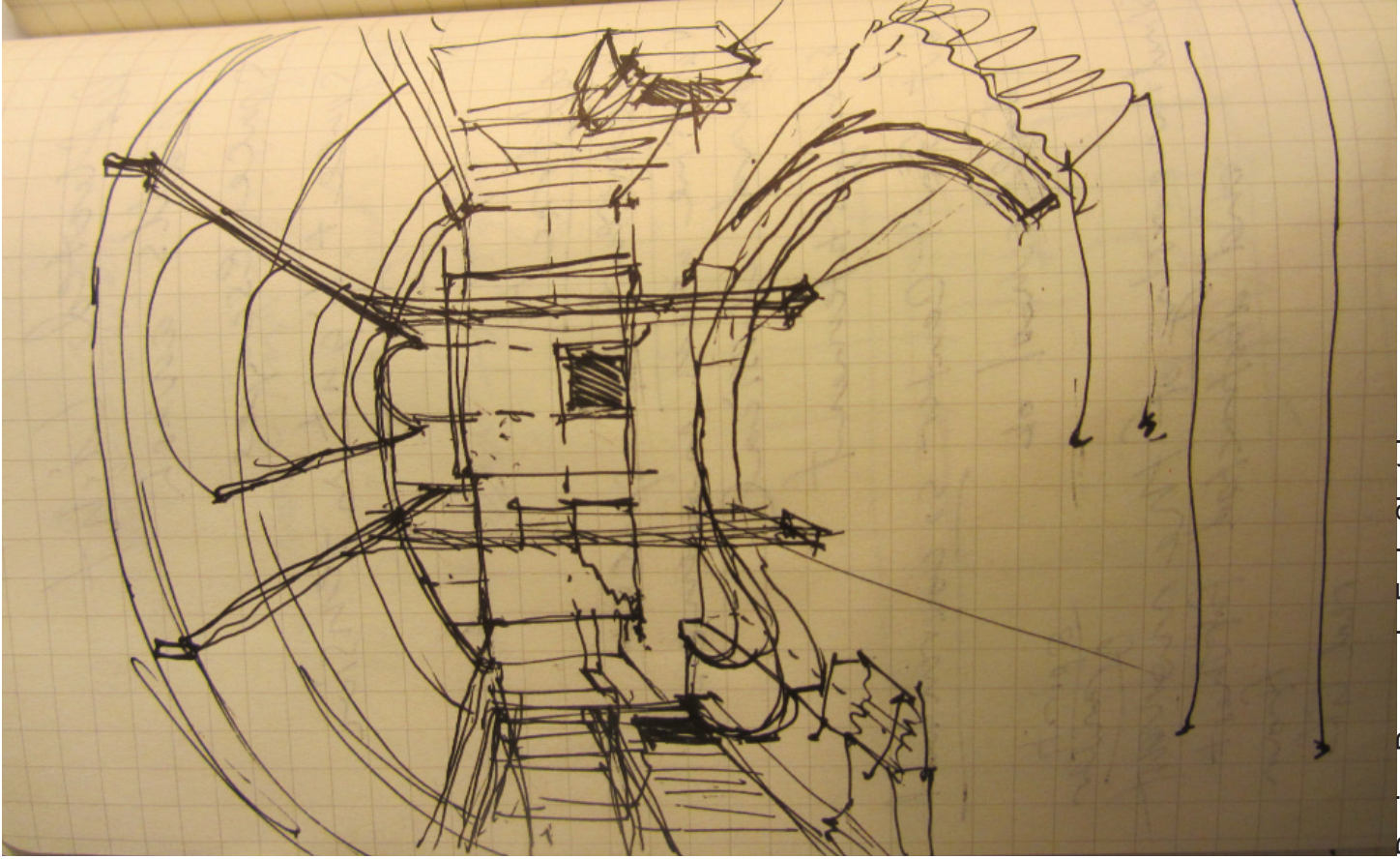
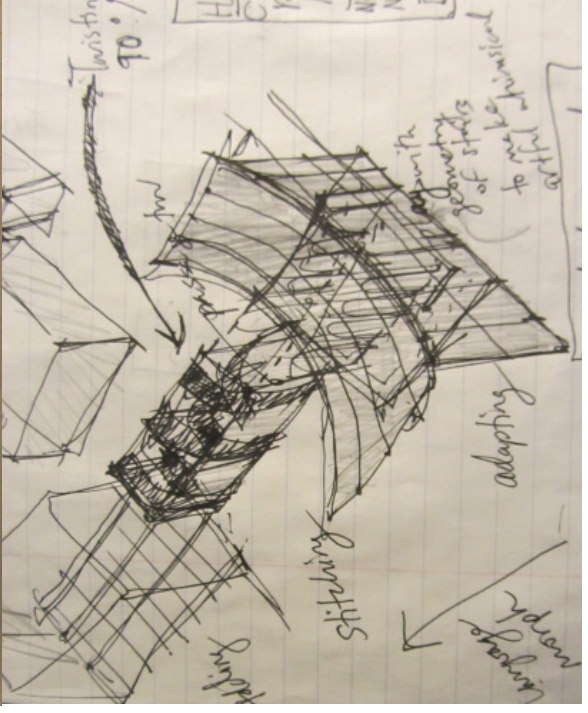
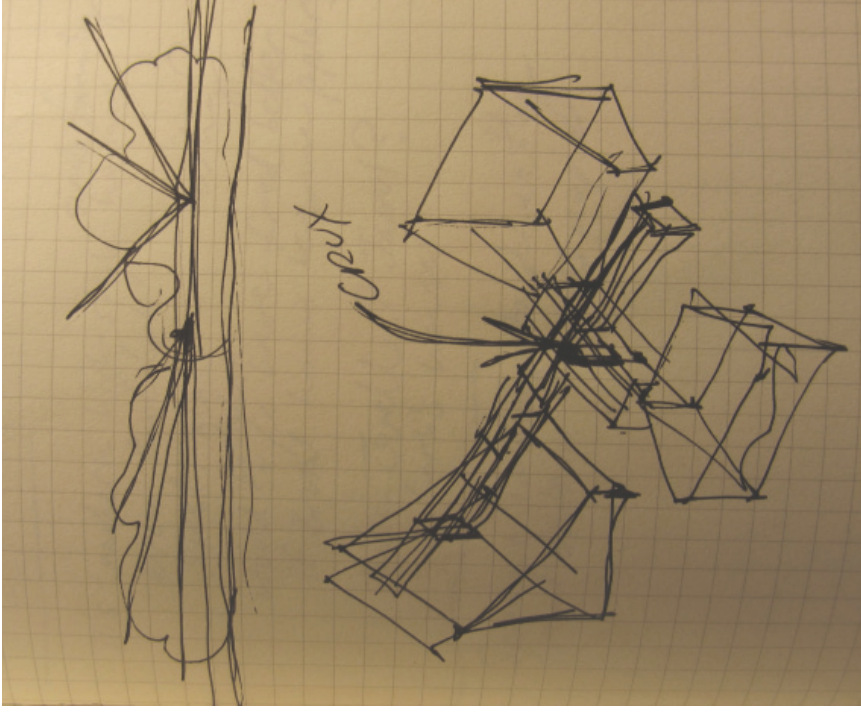




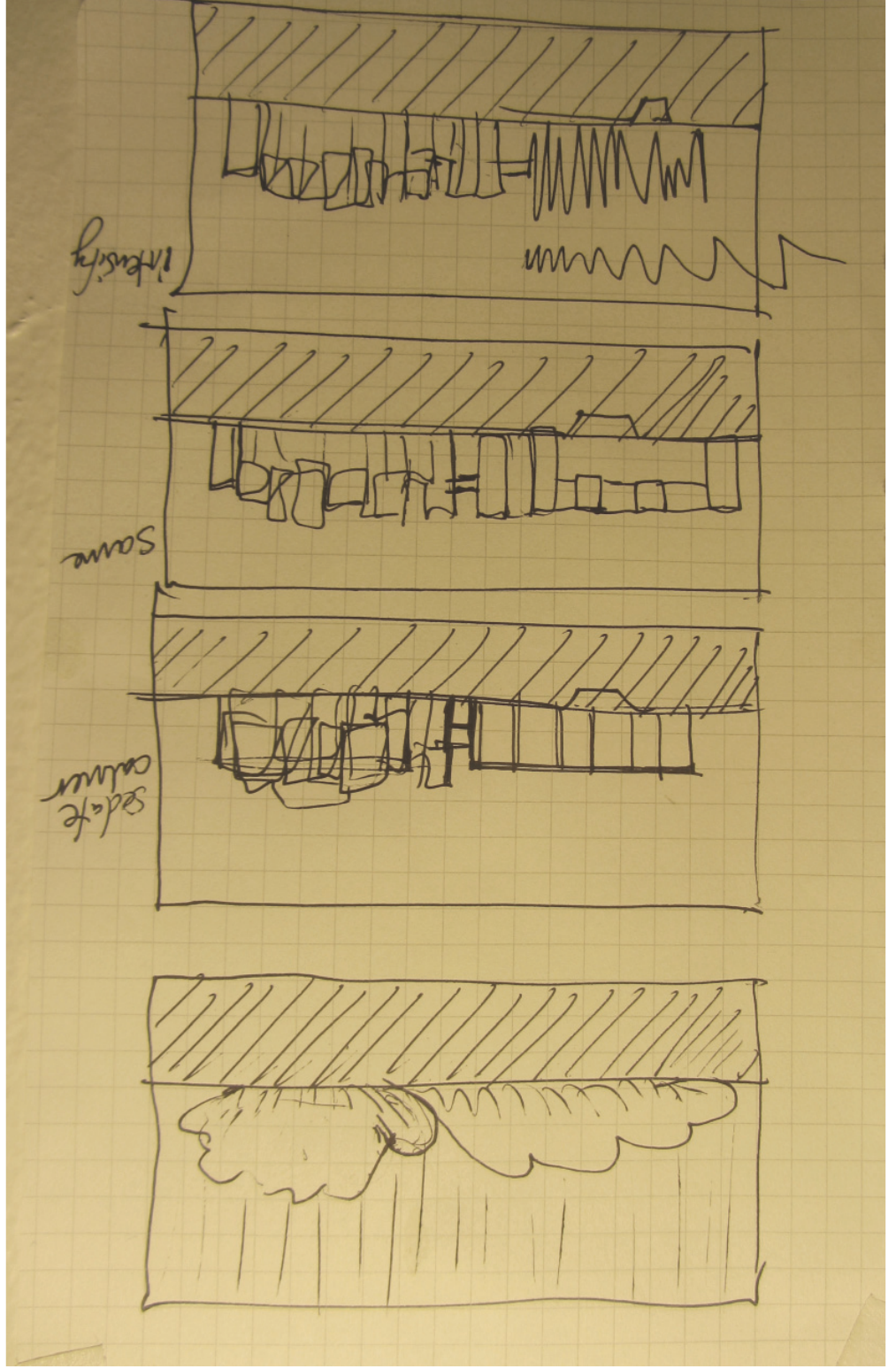
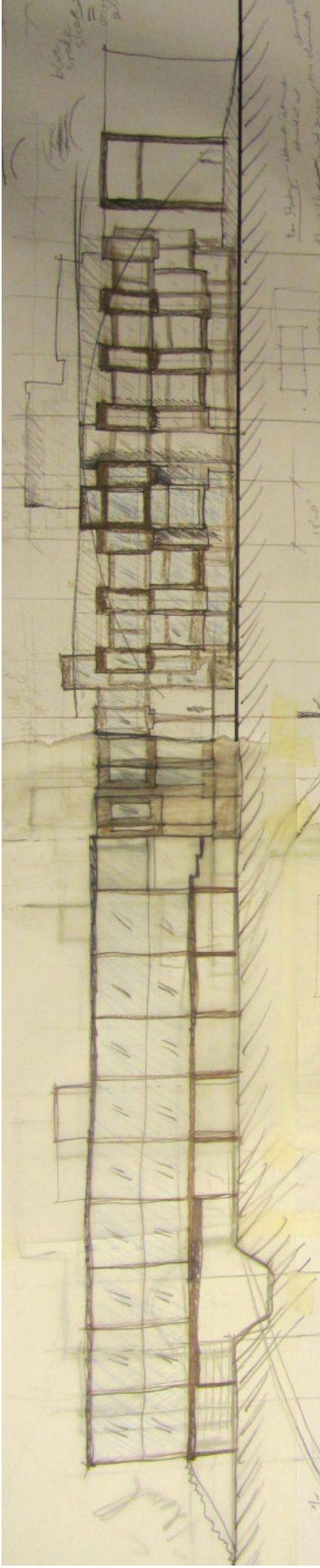
100'

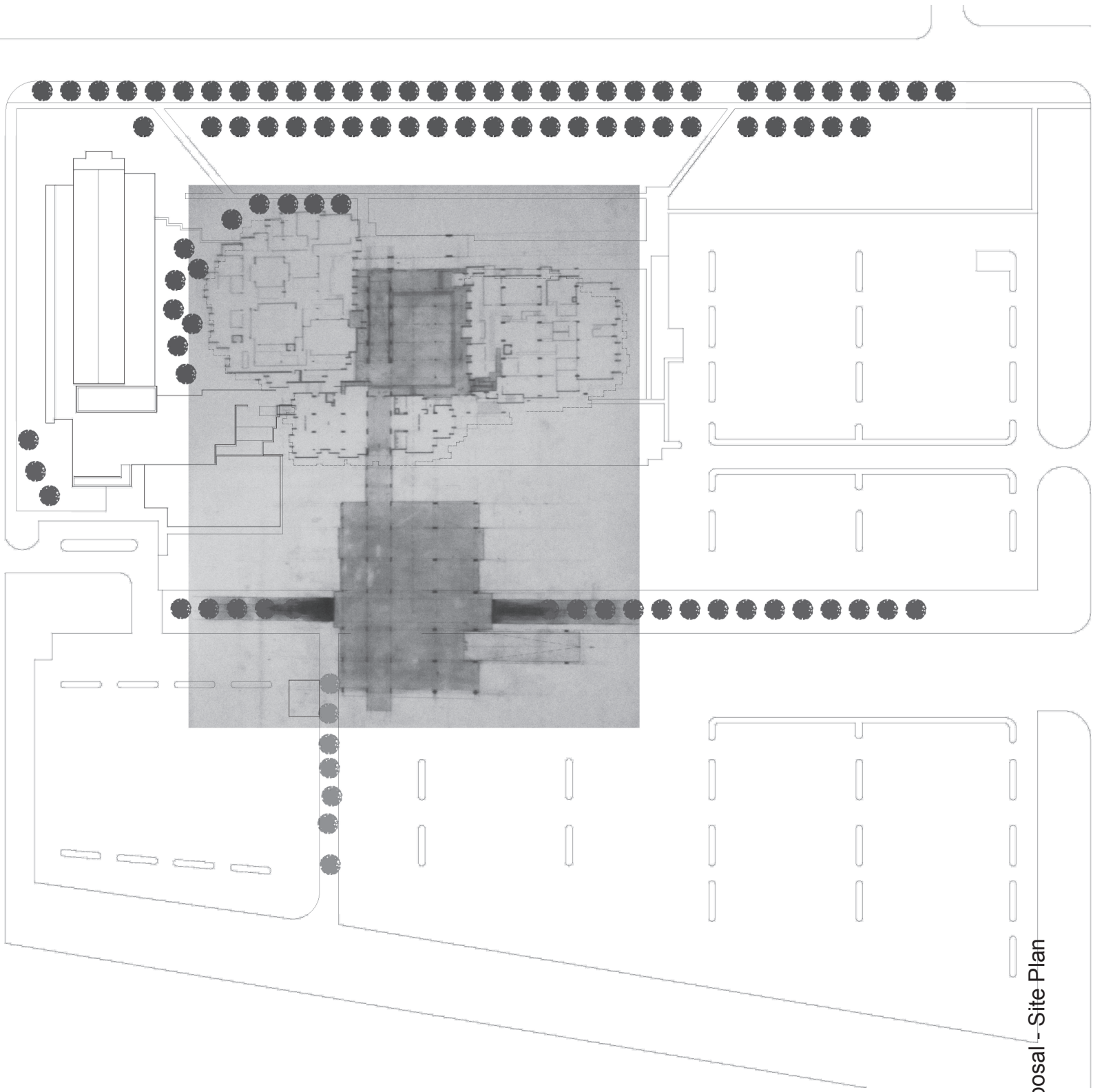


Design Proposal - Early Courtyard study

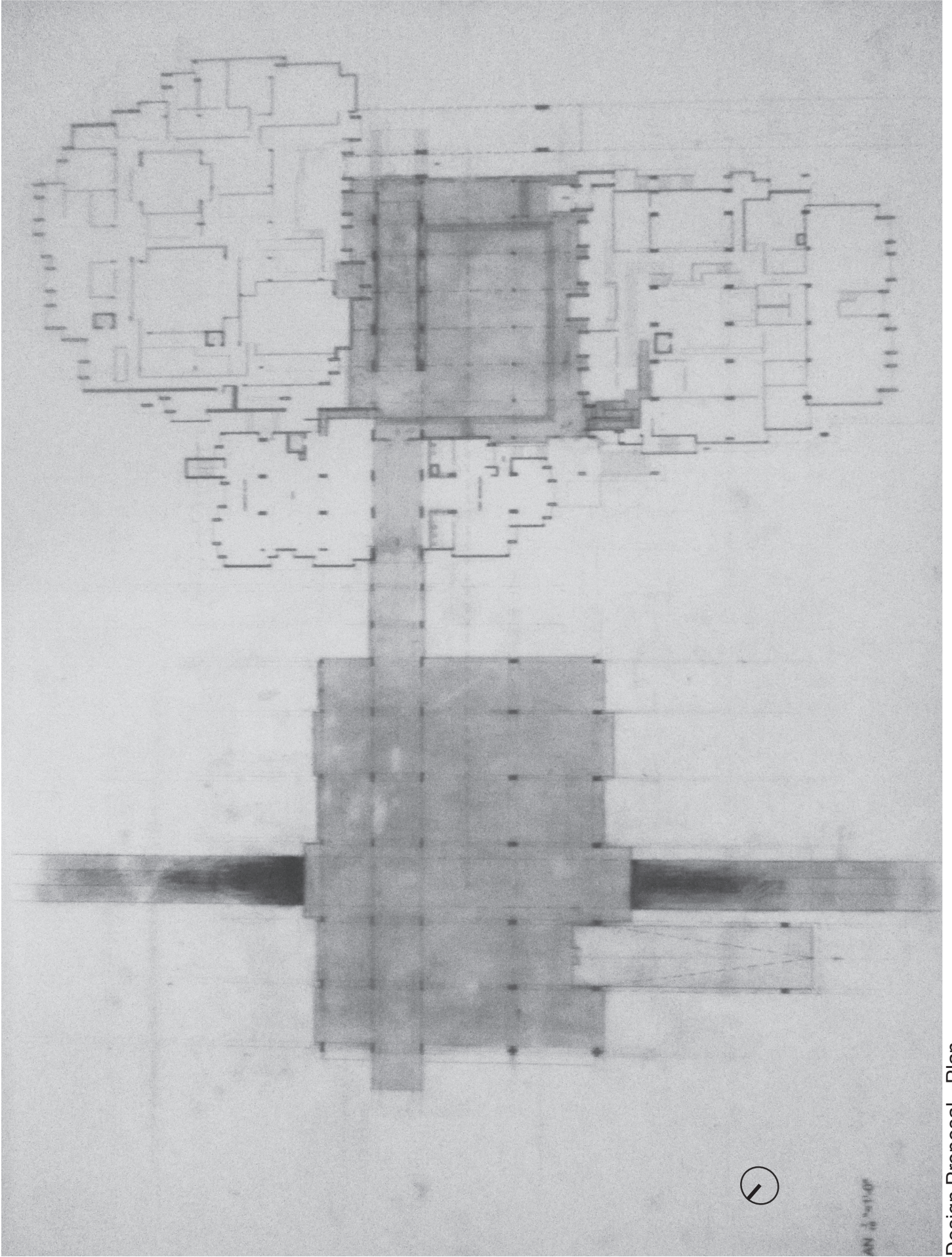


Design Proposal - Early Sketches

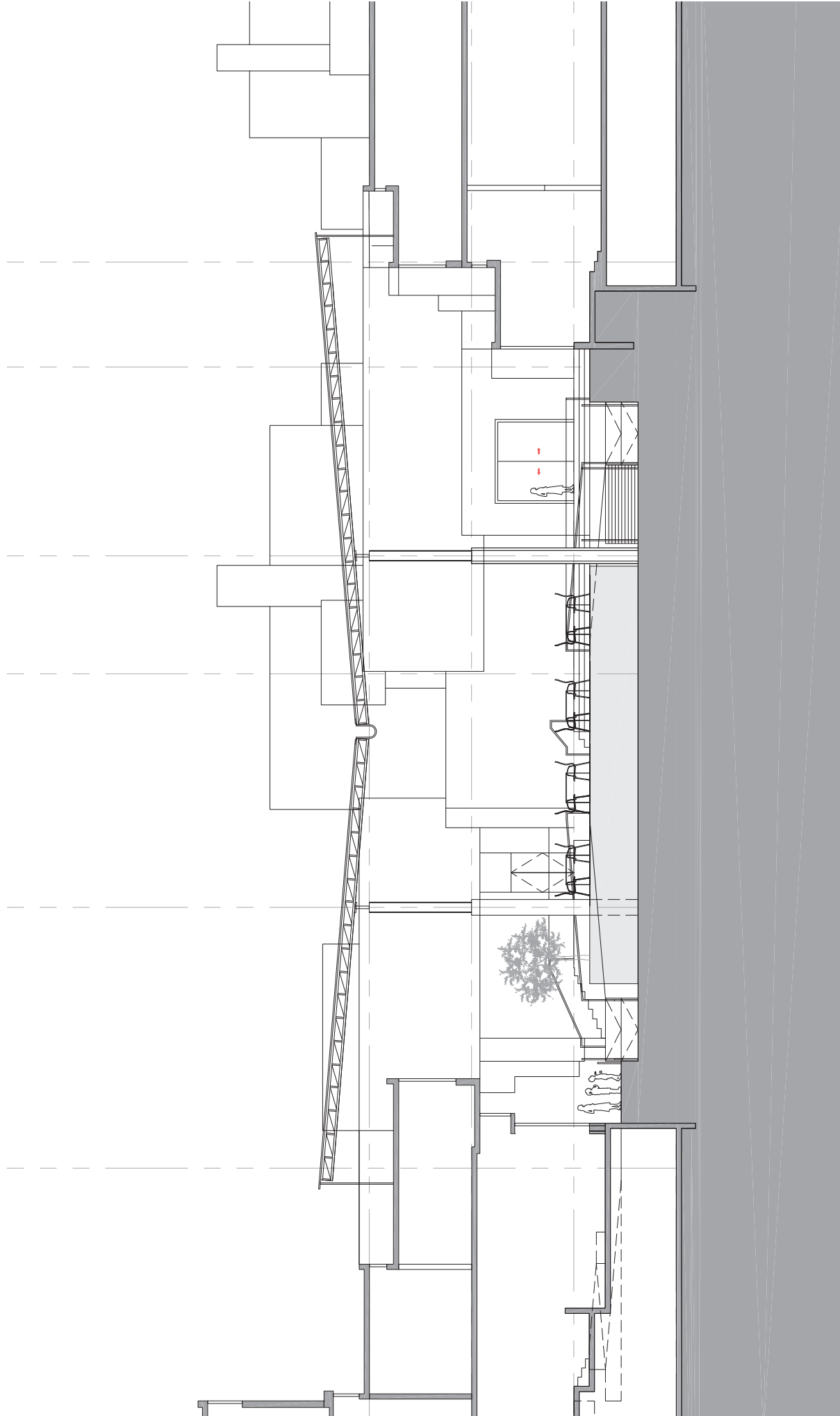




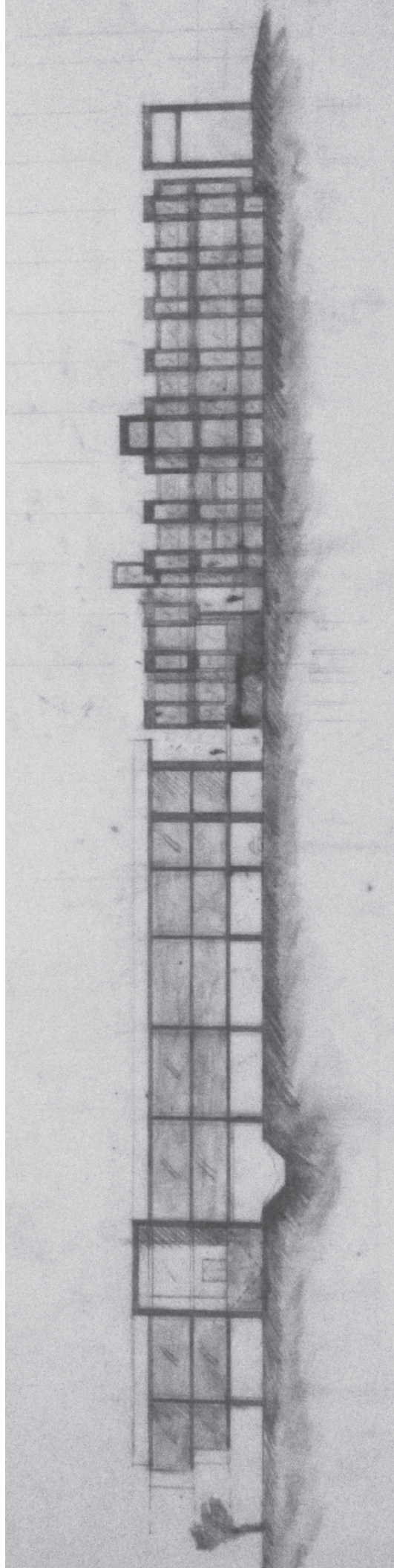
Design Proposal - Site Plan



Design Proposal - Plan



Design Proposal - Section through Courtyard



Design Proposal - South Elevation