

*PROCESSING THE
PROGRAM:
CONSIDERING THE
ARCHITECTURAL
BRIEF*

Brian Sykes

PROCESSING THE PROGRAM

CONSIDERING THE ARCHITECTURAL BRIEF

Brian Sykes

Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University in partial fulfillment of the requirements for the degree of: Master of Architecture.

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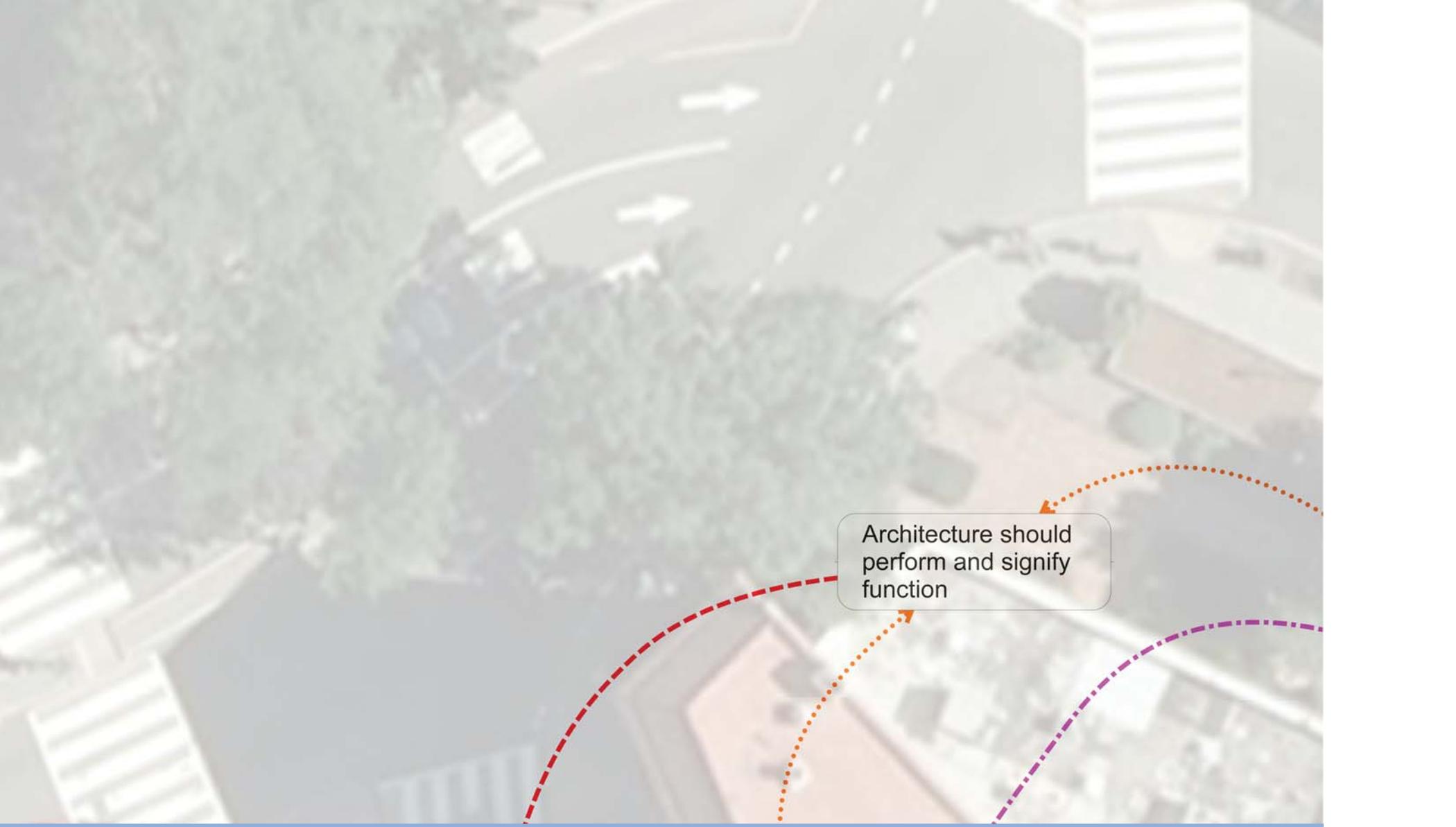
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ABSTRACT

The architectural program is often seen as a shopping list of requirements the client presents to the architect with the expectation the architect will create a design solution to address the owner's requests. The shopping list may or may not be created with the assistance of an architect. The program in this form is often the result of some form of analysis. The design is then intended to be a formal synthesis. This reductionist approach to architectural program degenerates the capacity of the program to merely solidified functional relationships. Additionally, this approach limits the concept of the program to the initial pre-design phase of the life of the building.

My thesis offers a more provisional approach to the concept of the program - breaking apart constant architectural concerns within the pre-design portion of the project into individual concerns/programs to be addressed, and then recombining those individual aspects through a series of contingent imaginings, or processing. Accepting contingency, or the impermanence of various conditions within the architects sphere of influence, as a key aspect of a "pre-graphia" moment, provides the architect with an opportunity to embrace patterns of change within architecture and the world at large. Architecture should address topics such as transforming construction technologies, the individual site as it changes over time, or patterns of bodily inhabitation and imagine possibilities for a project . As a building's purposes change, at varying rates, so will certain aspects of architectural performance.

For my loving wife Tamara. Thank you for everything.



Architecture should perform and signify function

Narrative should reflect the contingent nature of social justice

Engagement in Community

Sustainability/Program for the Elements

What should be the relationship between architecture and social justice?

Greek = idea + grapho

Graphic symbol that represents a concept

Ideogram

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Foreward

When you imagine an architect at work, even in the 21st century, you imagine an individual at a drawing board. Architects test formal compositions in an iterative process to achieve an imagined result that addresses a myriad of challenges. How well these concerns are addressed often depends on how well questions are asked. Certain questions are very easy to articulate — a hospital needs a new emergency room because of demographic trends. A new public health laboratory is needed for national security. The design solutions to these easily asked questions are complex, often due to the complexity of the facilities being designed. The architectural solutions are also difficult to arrive at, because there are often many solutions to a problem, and the better one must be selected.

Other questions relating to an architectural design brief are very difficult to articulate. Part of this confusion is a failure to understand what a brief is, what it can become and its role to the architectural solution. What was an architectural program, what is it currently, and what can it become in the future?

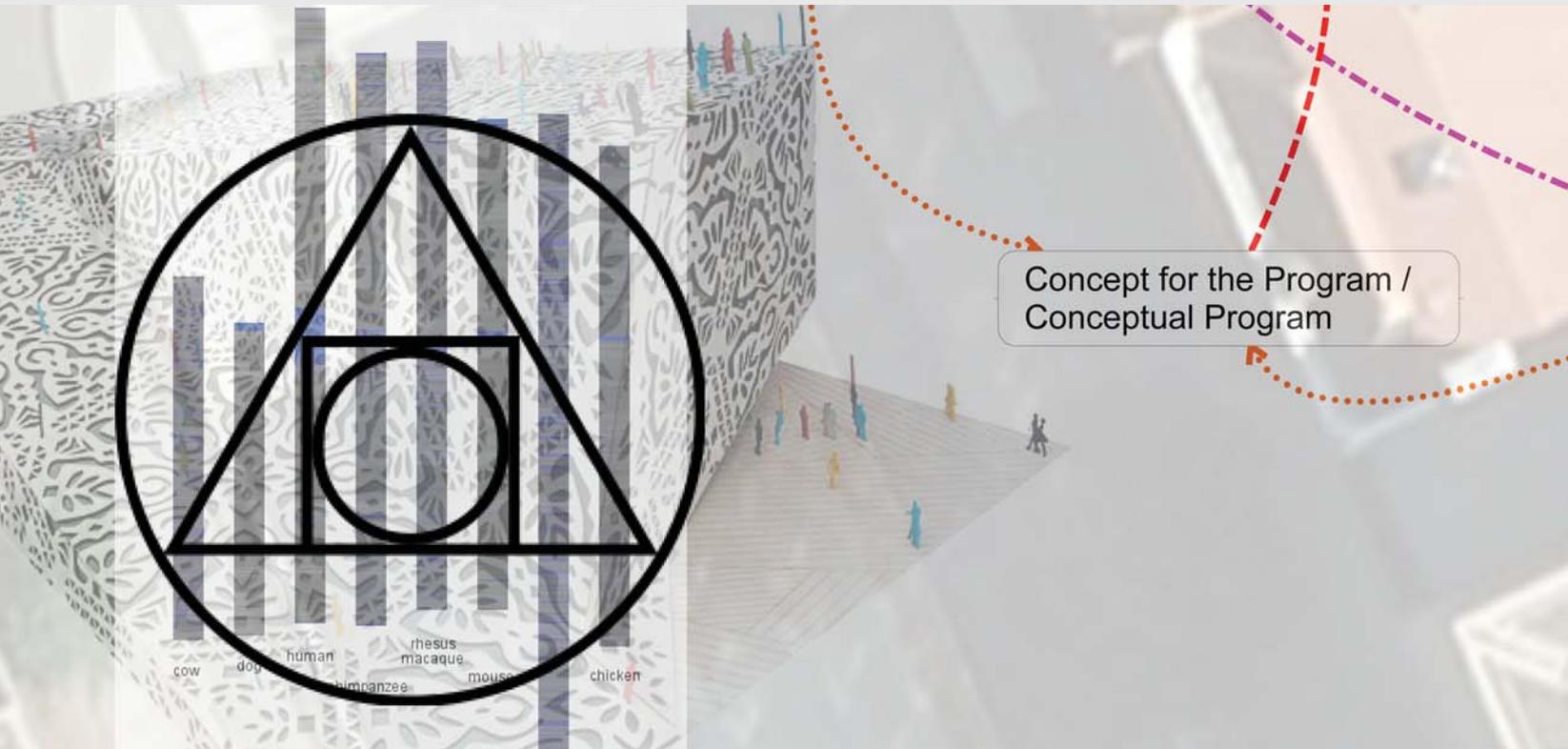
The Provisions Library project is the keystone for an investigation into the architectural program. The project allowed me to reflect on the role of the program within the process of conceiving a building. Not just pragmatic square footage needs of an institution, or the need for a large overhead door to move art into the building, but how can a concept be born from a program. In short, how can an architect design through an aspirational program, not just design around a pragmatic program? What form should that program document take? The problem of articulating a good question is difficult. I by no means claim to answer the question in its entirety within these pages. I do hope that this search brings some clarity to the possibilities of an architectural program.

Journey's like this are never taken alone. I must thank Don Russell for allowing me to use his institution as the catalyst for my thesis project. The Provisions Library is the embodiment of what the combination of contemporary art and social justice should be in the 21st century. This is all thanks to Don's work and vision.

I must also thank the faculty at the Virginia Tech, Washington Alexandria Architecture Consortium. Jon Foote is the best colleague/supervisor anyone could ask for in an academic setting. I will argue the shop at the WAAC is the epicenter of reflective architectural experimentation, and Jon's tireless energy and dedication is the impetus for that environment. I must also thank my classmates. In particular I must thank Beth Barrett, for sharing a studio with me, and creating an excellent atmosphere to work, reflect and talk about architectural ideas. I must thank Susan Piedmont-Palladino, who forged into me an appreciation for the city and the individual site in architecture. My hope for the future of architecture and the possibilities of 21st century technological culture is thanks to the multiple conversations of John Schippers. Dr. Marcia Feuerstein's imagination and thoughtful consideration of the body taught me to remain anchored within the corporeal present and imagine the best. Finally, Dr. Paul Emmons, a man whose tireless dedication to architecture and his students is an inspiration for anyone who meets him. Thank you for everything Paul.

Finally, as is often the case with extended efforts such as this one, my wife Tamara deserves the most heartfelt thanks. To live with a person who is preoccupied with a project such as this one is an act of selflessness that cannot be repaid. To take an active role in the process, to read drafts and offer comment, and to press for its completion are far and away beyond spousal duty. Thank you, Tamara.

CONSIDERING THE PROGRAM



And God said to Noah, "I have determined to make an end of all flesh, for the earth is filled with violence because of them; now I am going to destroy them along with the earth. Make yourself an ark of cypress wood; make rooms in the ark, and cover it inside and out with a pitch. This is how you are going to make it: the length of the ark three hundred cubits, its width fifty cubits, and its height thirty cubits. Make a roof for the ark, and finish it to a cubit above; and put the door of the ark in its side; make it with lower, second and third decks. But I will establish my covenant with you; and you shall come into the ark, you, your sons, your wife, and your sons' wives with you. And of every living thing, of all flesh, you shall bring two of every kind into the ark, to keep them alive with you; they shall be male and female. Of the birds according to their kinds, two of every kind shall come in to you, to keep them alive. Also take with you every kind of food that is eaten, and store it up; and it shall serve as food for you and for them." Noah did this; he did all that God commanded him. (Genesis 6.9-32, NRSV)

This passage from Genesis illustrates that an awareness of the architectural program is as old as architecture itself. The architectural program as articulated in the passage above reaches beyond a reductionist, functionalist approach to the pre-design portion of an architectural project. The program specifies material and type of construction, composition, occupants and food storage requirements. As an architect reflecting on the technical complexity of the program God gave to Noah, one marvels at Noah's accomplishment.

There was a very explicit purpose to the creation of the

ark – to save the world's creatures. God told Noah, in no uncertain terms, the ark that you design and build will save the creatures of the earth. There was also an implicit understanding of how the ark should perform as a work of construction. The ark had to provide shelter from water below and the rain from above. The ark served as a storage area for food and animals. Finally, though this is never stated in the program, the ark needed to possess a navigation system – a rudder and a centerboard – to steer the ship. You can imply that the ark had some sort of sleeping quarters, and hopefully a form of plumbing.

Our contemporary concept of the architectural program is relatively new to architecture and it is born directly out of our current cultural situation. The need for an architect to mediate on an architectural creation through drawings is as old as architecture. A much newer concept is that programmatic requirements isolate and articulate the variables to which an architectural project must respond. This current need to clearly identify the pre-design terms of an architectural program, as a separate document, has come into being since the eighteenth century. Though not specifically called a program until the Industrial Revolution, and not reflected upon as a subset of professional architectural practice until the 1960's,¹ the architectural program as the articulation of the terms of an architectural problem(s) is a key component in the creation of any building.

The program as a concept is a peculiar one. Programs in general often point to or create other entities. Program music is intended to evoke extra-musical ideas, images in the mind of

the listener by musically representing a scene or atmosphere. Programs for theatrical performances offer an individual attending an opera, ballet or any other kind of performance information about the performance, performers, and venue. Software programs enable users to create databases, participate in the financial markets, create BIM models, communicate with the world and write a master thesis. Programs broadcast on television and the internet, imitating and fictionalizing human life. The common denominator in all of these programs is the creation of an idea, image, or product as part of the program, that in turn points to another entity.

The architectural program is an entity within itself and subject to many of the same forces as any other entity created by a human. Yet the architectural program implicitly, and often explicitly, points to a forthcoming work of architecture. The architectural program is created by a combination of the visual and verbal originating within the social life and social thought of humanity. In an essay entitled, "Stating of the Problems,"

¹ A number of publications were issued in the mid to late 1960's dealing specifically with the problem of programming a facility, including *Emerging Techniques of Architectural Practice* published by the AIA, which references scheduling a programming phase. Additionally, in 1969 the AIA published, *Emerging Techniques 2: Architectural Programming*. Also published in 1969 was the first addition of *Problem Seeking: An Architectural Programming Primer* by Pena and Focke, architects practicing at Caudill Rowlett Scott (CRS).

Henri Bergson writes:

Now what is the original function of language? It is to establish a communication with a view to cooperation. Language transmits orders or warnings. It prescribes or describes. In the first case it is the call to immediate action; in the second, it is the description of the thing or some one of its properties, with a view to action. But in either case the function is industrial, commercial, military, always social. The things that language describes have been cut out of reality by human perception in view of human work to be done. The properties which it indicates are the calls made by the thing to a human activity. The word will therefore be the same, as I was saying, when the suggested step to be taken is the same, and our mind will attribute the various things the same property, will imagine them in the same way, will in fact group them under the same idea wherever the suggestion of the same advantage to be gained, the same action to be done, calls forth the same word. Such are the origins of the word and the idea... Social thought is unable not to keep its original structure. Is it intellect or intuition? I am quite content to have intuition let its light filter in to it: there is no thought without "esprit de finesse," and the "esprit de finesse" is the reflection of the intuition in the intellect.²

The interplay between analysis and intuition within our cultural context, is required to create the architectural program. As the pre-design component that identifies issues

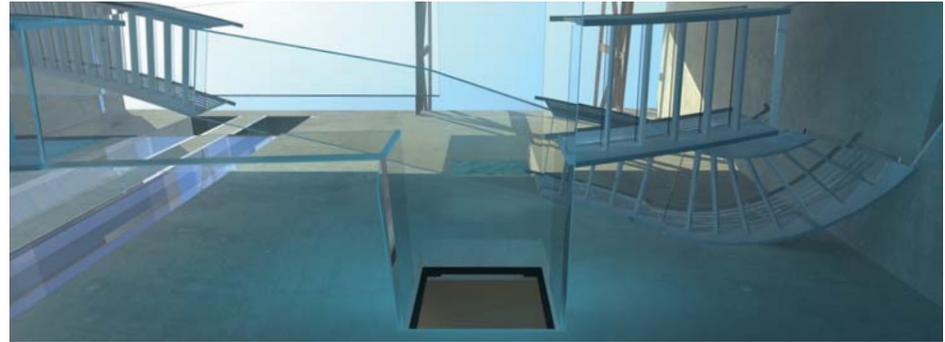
for architectural consideration, the program is pregnant with possibilities. Program comes from the Greek word *prographēin*³: *Pro* – meaning before, or in front of and *graphein* meaning to write, or scratch.

Born out of a need define the functional aspect of a building, the late 20th century definition of the architectural program relies on a reductionist strategy which does not serve the best interest of architecture as a humanistic cultural product. Programming an architectural work often is considered to be an analysis of a building's proposed use and how it will operate within the confines of a site. Programming should be viewed as the creation of a document that identifies the issues an architect must be aware of even if the architect cannot control them, and articulates items a design must address. Programs that simply create a shopping list of clients' needs, for an architect to design around, do not embrace imaginative possibilities of the "pre-mark" moment.

² Henri Bergson, *The Creative Mind, An Introduction to Metaphysics*, trans. Mabelle L. Andison, Dover Publications, Mineola, NY, 2007. p. 63. ³ According to the American Heritage Dictionary, program comes from the Greek *prographēin*.

Vitruvius

Before the Industrial Revolution, the relationship between analysis, intuition and the cultural context was much more nuanced. Use was important in ancient western architecture, but it was far from an overriding ideology. Understanding the relationship between what a culture's language defined as a use value and its architectural shape was a key architectural skill. Vitruvius writes, "In all things, but especially in architecture, there are two inherent categories: the signified (*quod significatur*) and the signifier (*quod significat*). *Quod significat* is the proposed subject of the discussion; it is signified by a reasoned demonstration carried out according to established principles of knowledge. *Quod significatur* is the terminology an individual needs to complete the conversation. Thus we see that whoever puts himself forward as an architect should be practiced in both."⁴ At first reading this may appear as if Vitruvius was discussing contemporary semiotics. Within the ancient Roman world, the signified and the signifier had very different meanings.



Rowland and Howe write in their translation of Vitruvius:

*These expressions (the signified and the signifier) appear to be adapted from Epicurean philosophy, particularly natural philosophy, and refer to the necessity of beginning all scientific investigations with a clear definition of terms....In modern criticism, these phrases are normally taken to express such ideas as the opposition of *fabrica* (practice) and *ratiocination* (reasoning) or the difference between the study of the "passive" work of architecture itself and what it "actively" express. Vitruvius is more straightforward on this subject. That which is signified (*quod significatur*) is the actual object of discussion, such as building, and so on, and the signified (*quod significatur*) is the terminology that one needs to conduct the discussion.⁵*

Vitruvius derived his view from Epicurean natural philosophy. "Epicurus held that the study of physics begins

⁴ Vitruvius, *Ten Books on Architecture*, ed. Thomas Howe and Ingrid D. Rowland, (Cambridge Press), New York, 1999, p. 22. ⁵ Vitruvius, p.135.

with the adoption of a method of inquiry... to have concepts which correspond to the words that are used.”⁶ In short, you must define the terms of the method of study.

The categories of which Vitruvius speaks are likely a number of things. At the macro scale, language and the shared meaning of words obviously is essential for creating the terminology for discussing architecture, such as the terminology needed for a particular ritual when founding a new town, but also the common cultural language that allows everyone to understand what a temple is and how it should be used or even what a house is and how it can be inhabited. The common denominator of understanding is what allows almost everyone within a given culture to identify a house, or a temple, or in a contemporary sense an office building. The common understanding of the terms of buildings is why, at its best, architecture is an imaginative social art.

Defining the specific terms that will frame an individual architectural project is an arduous task. Just as our current

definition of the program did not exist for Vitruvius, our contemporary definition of function was not part of ancient Roman culture. But utility (*utilitas*) was a significant factor for Vitruvius.

*Vitruvius is concerned primarily with utility as it is commonly understood, the ability of a building to meet its pre-assigned role as a place for enabling, sheltering, and organizing human or divine activity. Certainly function is one of the most important determinants of form. A structure must be envisioned in terms of the ways people will use it. Will it be a multifunction facility, like a basilica? Or will it serve a narrow range of functions, like a theater or odium, or a single function, like a latrine? What special uses has the buildings sponsor stipulated? The architect, then, will start with a known plot of land, a designated building type (temple, amphitheater, villa, bath, etc.), and the patron's stated wishes, and probably a variety of other factors that will condition his design (building codes, geological and hydrological conditions, availability of labor and materials, etc.).*⁷

The very class-conscious Roman culture demanded that various public building types had to fall within certain social archetypes. “Roman building types generate a scatter in at least three quadrants of the new Cartesian plane: dedicated +

⁶E. Asmis, *Epicurus' Scientific Method*, Cornell University Press (Ithaca and London, 1984), 19 – 20. ⁷Taylor Rabun, *Roman Builders, A Study in Architectural Process*, Cambridge University Press, New York, 2006, p. 23-24. ⁸Rabun, p. 24.

segregated (amphitheaters, theater, temples, etc.); dedicated + integrated (baths, markets, etc.); and multipurpose + integrated (basilicas)... it is obvious that the architect had to be aware of them and of the special wishes of his patron.”⁸

Occupying a place among the Vitruvian triad, *utilitas* is difficult to isolate as a component from *venustas* and *firmitas* within the Roman integrated method of thinking. *Thematismos*, or function, is mentioned in reference to the design of temples and also in the layout of private buildings.⁹ Therefore, the program of the architecture of a temple was to embody the cosmological beliefs of the Roman culture regarding a specific deity. The programmatic technical complexity of a temple lay not just in accommodating the ritualistic performances of worship, but in designing a temple to a given god in the manner that was most appropriate for that individual god.

In Book Five on public buildings, Vitruvius lays out his

most complete articulation of the pragmatic arrangement of buildings. Vitruvius sets out rules for theaters regarding crowd separation, acoustics, and stage set design. The architect’s understanding of acoustics led to the fact that sounding vessels would be needed for crowd to hear the performers:

*...let bronze vessels be made on mathematical principles in keeping with the size of the theater, and have these vessels so made that when they are touched, they can produce among themselves the diatesseron, diapente, and so on, up to disdiapason. Afterward place them in chambers set up for the purpose between the seats of the theater, and place them there according to the principles of music, so that they touch no walls and all around them they have an empty place and space above their heads.*¹⁰

This understanding of harmonics and technical devices to control acoustics points to a specific design requirement. In order to be considered successful, the architectural design of the amphitheater had to address items that were expected from the public.

In contrast the program of a private building primarily

⁹ In the reference to temples, Vitruvius writes that the God for whom the temple is built determines the order that should be used in the construction of the building. In the passage of private buildings, Vitruvius writes how rooms should be according to their use in relation to the season. For example, winter dining rooms should be on the west of the building but spring dining rooms should face the east. ¹⁰ Vitruvius, p. 67. ¹¹ Vitruvius, p. 256.

would be that of comfort and health. Vitruvius writes each region should possess its own type of house according to the climate. As Howe and Roland point out in the commentary, “The functions of the rooms in a house are hard to define; probably in part because they were highly multifunctional... The list of elegant specialized rooms is a trait of spectacular luxury villas and domus of the late Republic.”¹¹ Generous and multifunctional rooms do not imply the same sort of emptiness that our current concept of flexibility reflects. In his discussion on symmetry, David Leatherbarrow points out, “In architectural enclosure this (symmetry meaning action and life) will involve thinking of rooms as settings arranged for the enactment of typical human purposes.”¹²

For Vitruvius, particular building types require working knowledge of the building’s purpose and how the architecture should support it. Though temples, baths and theaters housed specific functions, they often were used for other purposes as well.¹³ Social multivalency creates greater social meaning by

allowing the residue of memory to generate a community’s patina. This lesson is still applicable to contemporary architecture. “Although architects are responsible for the design of spatial settings, the measure of their success depends on the adequacy of those settings with respect to patterns of behavior no one has designed, the situations and institutions of contemporary culture. Adequacy in this formulation includes two kinds of performance, practical and figurative, for settings must accommodate and express patterns of our lives.”¹⁴ Furthermore, different patterns of life inhabit different parts of the built environment – patterns of street life differ from patterns of worship. Specific building requirements can be identified – acoustical requirements, orientation of a building to the sun – but due to their complexity patterns of life are more easily understood intuitively simply by actively participating in our world.

¹² Leatherbarrow, *The Roots of Architectural Invention*, Cambridge University Press, Cambridge, 1993. p. 86. ¹³ Porticoes in theaters were multi-functional spaces, where even the Senate could meet. Vitruvius, p. 249. ¹⁴ David Leatherbarrow, *Architecture Oriented Otherwise*, Princeton Architectural Press, New York, 2009. p. 121.

Iconography

“The hidden meaning of the built scripture was revealed slowly to her attentive ‘reader’ and was only obscurely apparent to the casual observer. In Hugo’s day, the pleasures of deciphering which were also pleasures of memory were replaced by the archival accuracies of eclecticism.”¹⁵

“The lesson of the heroic modernists, the smart-aleck building namers, and the duck builders is that architectural meaning encompasses more than a one-way process of “communicating” and symbolizing.”¹⁶

Within contemporary subcategories of architecture, iconography holds a place that is difficult to articulate.

Before the conceptualization of the program, iconography played a key role in articulating the purpose of a given building and how a building’s individual rooms were intended to perform for the inhabitants. The purpose of the building was conceptualized before the actual construction. The narrative that the iconography was intended to visually articulate was framed to support institutional ceremonies the structure would house. For example, within medieval architecture

the role of iconography was paramount. Richard Krautheimer lays out an argument for the development of medieval iconography through the process of inexact imitation of plan, elevation and iconography, as the process of development in architecture. The beginning of Richard Krautheimer’s seminal essay, “Introduction to an Iconography of Mediaeval Architecture” is worth quoting almost entirely:

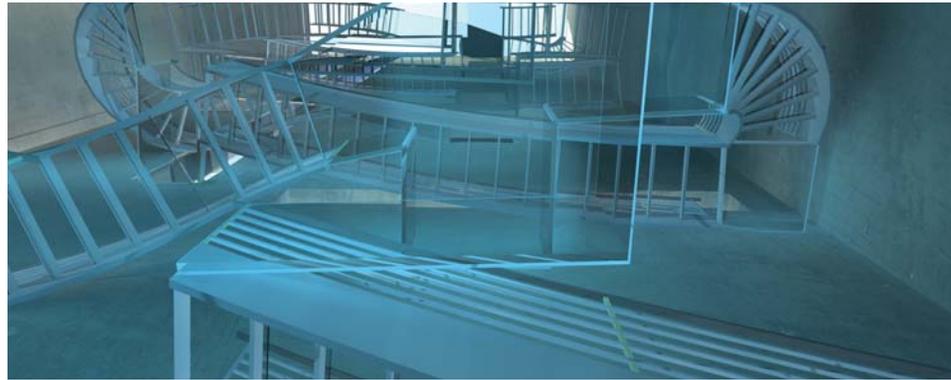
...no mediaeval source ever stresses the design of an edifice or its construction, apart from the material which has been used. On the other hand the practical or liturgical functions are always taken into consideration; they lead on to questions of the religious significance of an edifice and these two groups together seem to stand in the center of mediaeval architectural thought. Not once, it will be remembered, does Suger refer to the revolutionary problems of vaulting and design his new building at St. Denis. Evidently the design of an edifice or for that matter the construction were not within the realm of theoretical discussion. On the other hand the religious implications of a building were uppermost in the minds of its contemporaries. Time and again Suger discusses the dedications of altars to certain Saints. Questions of symbolical significance of the layout or the parts of a structure are prominent; questions of its dedication to a particular Saint, and of the relation of its shape to a specific dedication or to a specific religious – not necessarily liturgi-

15 Joseph Rykwert, “The Purpose of Ceremonies”, *The Necessity of Artifice*, Rizzoli, New York, 1982. p. 131. **16** Dell Upton, “Signs Taken for Wonders,” *Relearning from Las Vegas*, University of Minnesota Press, Minneapolis, Minnesota, 2009. p. 159

*cal – purpose. The ‘content’ of the architecture seems to have been among the more important problems of mediaeval architectural theory; perhaps indeed it was its most important problem. The total of these questions would form the subject of an iconography of architecture.*¹⁷

The iconography of the building is directly related to the ceremonies that were housed within the cathedral.

There is a qualitative distinction to be made between the iconographic program, and the functional program. There is another point that should be made: even though the visual interpretation of the iconographic program would not be as multicultural in its interpretation during the medieval period of western history, the fact that it is a visual program makes it more syntactically dense¹⁸ and open to more interpretations from various individuals.



The cultural shift to enlightenment thinking or, “changing world view ushered in by Galilean science and Newton’s natural philosophy,”¹⁹ turned the western world to a more rationalist mode of thinking and is well documented. One key piece of thinking that is intrinsic to architecture, regarding the roles of function and representation comes from the teachings of the “Socrates of Architecture,” the seventeenth century Franciscan friar Carolo Lodoli. As Rykwert observes, most of Lodoli’s teachings come to us through writings by Francesco

¹⁷ Richard Krautheimer, “Iconography of Mediaeval Architecture,” *Journal of the Warburg and Courtauld Institutes*, Vol. 5. (1942) p.1. ¹⁸ Catherine Elgin and Nelson Goodman, *Knowing and Making, Reconceptions in Philosophy* (Hackett Publishing Company, 1987), Indianapolis, IN p. 8. Goodman and Elgin make the distinction between the syntactically differentiated in language and the syntactically dense in representational systems. They argue that syntactical density leads to greater possibility of interpretations and meanings. ¹⁹ Alberto Perez-Gomez, *Architecture and the Crisis of Modern Science* Cambridge: MIT Press, (1983), p 3. Within architecture theory Perez-Gomez, Marco Frascari, and many others have written about the loss poetry within architecture due to rationalist ideologies. ²⁰ Joseph Rykwert, “Lodoli on Function and Representation,” *The Necessity of Artifice*, (1982) Rizzoli, New York. For the purpose of this essay, I will focus on Memmo’s account of Lodoli’s teachings. ²¹ Rykwert, *Ibid.* p. 117

Algorotti and Andrea Memmo.²⁰ Lodoli's teaching focuses on two key areas – function and representation. Rykwert writes:

Funzion would then be identified with rappresentazione. Modern translators take that phrase to suggest that what goes on inside the building (in the planning as well as the structural sense) might show on the outside. This is not quite Lodoli's intention. Both terms of the adage had a precise enough meaning when Lodoli coined them, and were much bandied about in scientific and philosophical controversy. Function, the first, had recently been re-coined. Not that the word itself was new; it derived from the Latin fungor, I perform, and had been used in a number of European languages to mean activity or performance in general, or the specific activity of certain things or persons, particularly the carrying out of any ritual or ceremonial action.²¹

Function for Lodoli was a term he borrowed from Gottfried Wilhelm Leibniz to describe the body's movement in planning the building and to describe multiple variables of mechanical force AND material within any specific component of architecture. In turn, according to Lodoli, each of these variables should be represented in the building. The spectacle was the ritual in which individuals participated. Their bodies

performing an activity within a structure that was planned for this ritual, and the structures of the building were illustrated to the viewer.

For the last century, the schism between high and low culture buildings generated a conversation about the role of iconography and ornament.²² Robert Venturi, Denise Scott Brown and Steven Izenour's account in *Learning from Las Vegas* is central to this conversation. Their sharp distinction between ducks and decorated sheds directly relates to the condition of the symbolic iconography within architecture. But even these authors never directly touch the relationship between the program and iconography.²³ He often mentions the program as an element for the creation of architecture, but read in context, Venturi's use of the word program is often a stand in for function.

Our contemporary understanding of iconography relates more to the branding of commercial and institutional organizations as opposed to the mythic rituals. From a contemporary

22 Though iconography and ornament are similar in their definitions, they are different topics that are easily confused. Rykwert uses the terms interchangeable in his essay; "Ornament is no Crime", discussing the work of Venturi, Scott Brown and Izenour. For the purpose of this text, I will allow myself the same luxury. **23** Throughout *Learning From Las Vegas*, Venturi, Scott Brown and Izenour refer to the role of signs in constructing meaning for spectators on the Las Vegas strip, and point to the architect as an information organizer, but they do not relate the role of contemporary architectural programming to the iconography of the strip. **24** Denise Scott Brown, Steven Izenour, Robert Venturi, *Learning From Las Vegas*, (1993) MIT Press, Cambridge, Mass. p. 105

perspective, Venturi has argued, “In iconographic terms the cathedral is a decorated shed and a duck...And this duck is itself decorated with an appliqué collage of objets trouvés – bas-reliefs in masonry – more or less explicitly symbolic in content.”²⁴ In comparing the cathedral to the Vegas strip, Venturi then remarks:

*Just as the architectural evolution of a typical Gothic cathedral may be traced over the decades through stylistic and symbolic changes, a similar evolution – rare in contemporary architecture – may also be followed in the commercial architecture of Las Vegas. However, in Las Vegas this evolution is compressed into years rather than decades, reflecting the quicker tempo of the times, if not the less eternal message of commercial rather than religious propaganda.*²⁵

This brilliantly jarring passage placing a cathedral beside one of America’s most storied places obviously glosses over a few key elements distinguishing the two forms of iconography.

One of the architectural over-simplifications is the relationship which Venturi touches on, but dismisses

too quickly – the relationship between the time and the iconography of the building types. The interior and exterior of both buildings are designed to provide a background for rituals of power – whether within the inspirational rituals of the church or the mechanistic rituals of capitalism. The materials and construction techniques of the cathedral are radically different than that of casino. Cathedrals were typically constructed of masonry, with exposed structural elements such as flying buttresses, and static iconography that demonstrates physical depth. Casinos employ structural steel columns with exterior skin that is intended to constantly change, with little or no depth. The interior finishes of a casino are intended to change frequently, and accord to market driven styles. The constant of the cathedral allows for a stream of human memories to hang on a concrete anchor. The casino measures time in the seconds between the flashes of the lights. Additionally, the cathedral marks time, by allowing weather to patina the building. There is no indication of weather in the casino. In distinguishing

²⁵ Scott Brown, Izenour, and Venturi, p. 106. It is worth noting that cathedrals were also dressed according to the season with temporary decorations to support the rituals that took place within. One of the key differences is that the temporary cathedral decorations were still framed by the cathedral building. Within the casino the elements of the building are hermetically sealed with only the interior finishes reflecting the intention of the designer. There is no residue of human action to provide a deeper and more multivalent meaning to the viewer. For more on the topic, see Joseph Rykwert’s text *Church Building*. ²⁶ Ibid. p. 139.

duck and decorated shed, Venturi, Scott Brown and Izenour write that they believe that the decorated shed is a more appropriate model for contemporary architecture, as it allows the building to remain program-neutral.

Articulated architecture today is like a minuet in a discotheque, because even off the highway our sensibilities remain attuned to its bold scale and detail...The two-foot cantilever on the face of a building, put there to suit a sensitive nuance of the program discerned only by the architect, is a hangover from more stable times. Today programs can change during the course of construction. We cannot afford too-literal conjunctions between form and transient functions.²⁶

One last fault with Venturi, Scott Brown and Izenour's observation of Las Vegas is that it discounts the placement of the body viewing the exterior of the casino. Whether this is a result of Venturi's focus on the viewer occupying an automobile as opposed to a sidewalk, the concern I would like to raise is that Venturi does not recognize the body within the landscape outside of the casino. Dell Upton writes, "We simply need to acknowledge that even our verbal encoun-

ters with architecture depend on fundamental, embodied engagement with our material surroundings, an engagement based not simply on looking at signs but on immersion in a multidimensional landscape."²⁷

Where Venturi, Scott Brown and Izenour are spot on is how the cathedral and the casino communicate with the viewer through iconographic forms that are born out of our cultural context.

Ernst Gombrich's book Mediations on a Hobby Horse is also cited by Venturi, Scott Brown, and Izenour as an important influence. Gombrich's thesis – that physiognomic forms are ambiguous, and they can only be interpreted within a particular cultural ambience – is consistent with Venturi, Scott Brown, and Izenour's belief that the symbols on the Strip conform to a conventional system of meanings that are not inherent in the forms themselves.²⁸

As with other cultural objects, iconography does not just come from within our cultural context; its social re-imagining creates new meaning. This is true for all architectural forms, but it plays a particularly significant role within iconogra-

27 Dell Upton, "Signs Taken for Wonders," *Relearning from Las Vegas*, p. 158. It is important to remember the concept of the multi-dimensional landscape applies to both the exterior of the building and the interior of a building. **28** Ritu Bhatt, "Aesthetic or Anaesthetic: A Nelson Goodman Reading of the Las Vegas Strip," *Relearning from Las Vegas*, p. 25.

phy, due to its didactic nature of communication. Thus, the relationship between programming, function and iconography can be isolated strictly to a building. But as Upton points out, by isolating their analysis of signs from the multidimensional landscape, and by not taking into account the body's engagement with its surroundings, Venturi, Scott Brown and Izenour reduce the opportunity for iconographic and programmatic potentials to a single dimension – that of popular culture. A richer opportunity for a multi-dimensional architecture is provided by revisiting Rykwert's translation of *funzion* and *rapresentazione*, and in particular the relationship between these two elements and the role of iconography in contemporary architecture.

Iconography literally means “image writing.” As discussed earlier, the program is a document that points to architecture by identifying elements for an architect to be aware of, and the pre-mark moment before architecture. Hence the image writing of iconography may not only be incorporated into the

body of the pre-mark/document of the program, iconography may be the image that writes a building function through forms or representation within the program and as key elements of the building. The multi-dimensional landscape in which we exist allows iconography to embrace the elements that construct the landscape (earth, air, fire, water), the horizon, a bodily empathy for the resistance of gravity, movement around and within the site, the materials from which the iconography is fabricated AND the systems of communication/popular culture that Venturi, Scott Brown and Izenour discuss. Additionally, the representation of the intended performance of the body within a given enclosure (*funzion*) through the use of iconography allows the program to be manifest within a building's iconography (*rapresentazione*), whether that iconography is electronic or static, or expressed through a duck or decorated shed.

Programme, Genres and Destination: Conceptualization of the Architectural Program

During the eighteenth century, the debate over use and architectural principles of form and character became one of the focal points of discussion, particularly as academies of architectural education were established. A historical paradigm replaced the cultural idea of true proportions derived from the cosmos.²⁹ At the advent of the Industrial Revolution, architectural thinking took a decided turn from the ritualistic to the pragmatic. “The architecture of the Industrial Revolution owed to Durand the first coherent articulation of its fundamental principles and intentions. The influence of his theory on nineteenth-century European architecture...and students of the Ecole Polytechnique were quick to spread the new ideas, which indeed seemed indisputable.”³⁰ The program was a key component of that shift.

The program did not begin its life conceptualized as a

functionalist pre-design document. It would wait until the 20th century for that incarnation. For Durand’s teacher, J.-F. Blondel, it was a document for teaching. “For Blondel, programme was a more didactic, streamlined – that is, already directed – reference to the use of a building.”³¹ Blondel used the programme to direct students to building use and the genres (or types) which they should consider for their design. “A basic classification by use of religious buildings, secular buildings, theaters, private houses, and fortification was inherent to the classical system of architecture since antiquity.”³²

Blondel expanded on this concept. “...J.-F. Blondel in his Cours d’Architecture compiled a very much longer list of varieties of building (sixty-four altogether), and this formed the basis of his architectural system.”³³

The deliberate classification of building type, and in such a rigid manner is a key hallmark to enlightenment thinking. *Quod significatur* and *quod significant* were an intuitive process that was born out of a common cultural understanding of proper

29 Dalibor Vesely, *Architecture In The Age Of Deivided Representation: The Question Of Creativity In The Shadow Of Production*, MIT Press, Cambridge, Mass. (2004) **30** Alberto Perez-Gomez, *Architecture and the Crisis of Modern Science*, p. 310-311. Perez-Gomez text provides a detailed account of the cultural shift to a mechanistic perspective of architectural thinking. **31** Lily H. Chi, “On the Use of Architecture: The Destination of Buildings Revisited” *CHORA, Intervals in the Philosophy of Architecture*, no. 2, ed. Alberto Perez-Gomez and Stephen Parcell, (1996) McGill-Queen University Press, p. 23. **32** Adrian Forty, *Words and Buildings*, Thames and Hudson, New York (2000) p.304. **33** Forty, p.304.

building use and type. The classification, extensive documentation, and the resulting systemization and archive this process created allowed for a more mechanistic system of architectural design.

Later, Durand would continue this course of thinking. Durand's scheme of architectural education articulated in this *Precis*. There, Durand provided (design) techniques without regard to their use – though in the second volume, Durand showed his students how to adapt these forms to the programmes for buildings of different purposes.³⁴ The concept of an intrinsic cultural understanding of what a specific type of building should be, because of the ceremonies it housed, began to divorce itself from architectural composition and paved the way for the concept of function.

At this point, for both Blondel and then Durand, program was synonymous with genres. Blondel referred to programs as 'genres' rather than types, "...which indicates the literary

basis to his scheme; and secondly, his main purpose in listing all the varieties of building was to identify for each appropriate 'character'.³⁵ As Blondel, Durand, and even Durand's student Bouleé used the term, character was intended to express a building's purpose and even its locality. As the nineteenth century emerged, the definition of the term character would come to mean the expression of the building's character, and the character of the architect who designed it.³⁶

As a historical construct, Chi points out:

It is instructive that the use of buildings should become a topic of critical interest for architects at a time of great turmoil in Europe's urban and political landscape. That the topic might be conceived at variance from the idea that Form follows Function suggests ever more acutely that the use of architecture might be considered not as a transcendent concept but as a historical construction. That is, the various ways in which the use of architecture is named and discussed throughout history might not be homologous, but suggestive of different ways of conceiving the inhabitation of buildings.³⁷

34 Forty, p. 304. **35** Forty, p.304. **36** For a more thorough discussion of the concept of character, refer to Forty, pp. 120-131. **37** Chi. p. 19.



Destination is an architectural concept that was considered before our deterministic understanding of function. It states that the concept should be considered not as a term under the

ideological umbrella of function but beyond functionalism as a stage set for the “configuration of human relations as well as spaces and forms...planning and programming of social habitats are ‘pre-design’ problematics.”³⁸ The typical situations that occur within a building – eating out at a restaurant, studying at a library, working in an office building, or sleeping in a hotel – are not just items to be thought of as an item to fill out a checklist, for Chi and the concept of destination, these human activities (sitting, sleeping, walking) are ripe with design potential for subtle, architectural expression to celebrate these activities. Identifying them as part of the architectural program in order to conceptualize an architectural composition is an important step in creating a through program. Quantifying these metrics³⁹ is only a small part of the programming process. Articulating a programmatic concept, verbally or visually, for the quality of the circulation is an equally valid programmatic concern.

³⁸ Chi, p. 33-34. ³⁹ Here I use metrics to mean typical body dimensions.

The current understanding of the architectural program is closely related to concept of function. First used during the eighteenth century, “there are at least five different uses of ‘function’ prior to about 1930.”⁴⁰ During the twentieth century function became a key feature of modernist ideology and a key point of attack for post-modern critique.⁴¹

Returning to Lodoli’s use of the term function, which was discussed in the section on iconography, function is situated in a different position than our contemporary thinking regarding architectural function. As Rykwert describes, the etymological root of the word function comes from, *fungor*, which means “I perform.”⁴² This was not the way the term came to be used in the twentieth century.

From the concept of function came the classification and ideology of functionalism. The stylistic implications of the term function became obvious with the 1932 Museum of

Modern Art exhibition and book *The International Style*. The curators of the exhibition and authors of the book, Henry Russell-Hitchcock and Phillip Johnson, took particular care to exclude any of the social and political claims that were made by European modernist architects.

At the heart of the polemic of Hitchcock and Johnson was an exercise in connoisseurship. The authors sought to define the visual traits that assured the commonality of true modern architecture and thus established a style... An important corollary of Hitchcock and Johnson’s emphasis on the primacy of style was their rejection of “functionalism.” Thus within the progressive architecture of the preceding decade, they distinguished works of architecture that were functionalist and those that were not... For Hitchcock and Johnson, the archdemon of functionalism was Hannes Meyer, who, for example, in his time at the Bauhaus, constructed diagrams of circulation and sunlight that claimed to show the “factors determining a plan.”⁴³

Anderson continues to discuss the how function became a central part in the criticism of modernism by post-modernists attempting to discredit orthodox modernism. The program was subsumed by functionalist ideology. In particular, John

40 Forty, p. 174. **41** Forty points out in the introduction of his writing on function that it is the critique of modernism that actually gave function such a central part in architectural thinking. **42** Rykwert, p 120. **43** Stanford Anderson, *The Fiction of Function*,” *Assemblage* no. 2 (Feb., 1987), MIT press, p. 20.

Summerson's concept of functionalism dove to the heart of the program. "In an address to the Royal Institute of British Architects in 1957, the justly renowned architectural historian John Summerson argued that functionalism, in the sense of faithfulness to program, provided the unifying principle for modern architecture."⁴⁴ This is the myth that is observed to this day regarding the relationship between the ideology of functionalism and analytical architectural programming.⁴⁵

The optimism of Reyner Banham and his preoccupation with science regarding areas of perception, information and technology in the 1950's and 1960's stood as an alternative to the functionalist ideology of the time.⁴⁶ Vidler states:

...both Banham and Summerson were to propose alternatives based on what each thought of the radical rethinking of functionalism, ...based in "real" science. Banham, in search of what he called "une autre architecture," turned to the authority of military and corporate engineers, biological researchers, and social scientists; Summerson outlined a new concept of the program as the foundation of a "theory of modern architecture."⁴⁷

Another example of an attempt to reconcile architecture with its ecological responsibility is Archigram's work in the 1960's.

The effect of Archigram's work between 1961 and 1970 was to project into society a program and an aesthetic for the total environment – not "environmental design" or "computer-aided design," nor the high-tech idealism of a Buckminster Fuller...but an environmentalism that worked with every aspect of the contemporary environment, from consumer desire to ecological demand, from media to medium, from dream to the dream machine, from the suburban kit to the electronic tomato.⁴⁸

The inclusion of the ideas within Vidler's text aim to demonstrate that various strategies of reprogramming the architectural program at the most fundamental level were afoot as functionalism began to lose its ideological grip on architectural thinking. Not only are Archigram's and Banham's ideas about ecology a critique of architecture culture at that time, these ideas are foretelling of current contemporary thinking regarding integrated practice.

44 Anderson, p. 21. **45** Two examples of wrestling with the myth of the relationship of function to program are Rossi's concept of naïve functionalism in the *Architecture of the City* and Tschumi's concerns regarding the relationship between the program in his writings of the program in *Architecture and Disjunction*. **46** Vidler outlines Banham's thinking in contrast to John Summerson in his text, "Toward a Theory of Architectural Program," *October*, MIT Press, (2003) pp. 53-74. **47** Vidler, p. 61. **48** *Ibid.*, p. 68

It is not just architecture that is inclined to use the idea of function as a foreground for ideological wedge to set itself apart from other modes of cultural production. Function and concept were two items that were considered at the outset of the conceptual art movement. In his influential essay, *Paragraphs on Conceptual Art*, Sol LeWitt specifically uses function as the demarcation point to distinguish between his process of creating conceptual art and how others would create architecture.⁴⁹

Architecture and three-dimensional art are of completely opposite natures. The former is concerned with making an area with a specific function. Architecture, whether it is a work of art or not, must be available for use or else fail completely. Art is not utilitarian. When three-dimensional art starts to take on some of the characteristics of architecture such as forming utilitarian areas, it weakens its function as art. When the view is dwarfed by the large size of a piece, this domination emphasizes the physical and emotive power of the form at the expense of losing the idea of the piece.⁵⁰

In his early writings Peter Eisenman follows suit with this reductionist interpretation of utilitarian function and its separation from conceptual consideration of architecture as an art. Asserting that functionalism is nothing more than a contemporary form of humanism, Eisenman offers the critique that architecture should grow beyond the “classical” limitations of the trajectory that was set down in the Renaissance, and then further enforced during architecture’s search for origins during the Enlightenment. “The idea of architecture as something ‘added to’ rather than something with its own being – as adjectival rather than nominal or ontological – leads to the perception of architecture as a practical device. As long as architecture is primarily a device designated for use and for architectural program should construct a frame for the patron and architect to identify items for which the project is responsible.”⁵¹ Architects must be aware of the items they can control, providing concept(s) which construct narrative(s) of meaning(s).

Though Sol LeWitt was one of the first to write about

⁴⁹ Sol LeWitt, “Paragraphs on Conceptual Art,” *Artists, Critics, Context*, ed Paul F. Fabozzi (2002) Prentice Hall, Upper Saddle River, NJ. ⁵⁰ Peter Eisenman, “The End of the Classical: The End of the Beginning, the End of the End,” *Perspecta: The Yale Architectural Journal*, 21, (1984) p. 172 ⁵¹ Eisenman, p. 224.

the idea of conceptual art, Marcel Duchamp generated the cultural space for conceptual art to take place. "...Duchamp's discovery of art's profound dependency on and relationship to its physical and intellectual context. For Duchamp, the position of an artistic utterance was everything."⁵² In architecture, both programmatically and conceptually, the positioning of the body, and strategies for fit of the relationship of building part to building part, building part to building whole, and building whole to specific site, is not limited to the intuitive process of architectural design. An architectural project begins with analysis and intuitive process of the creation of the program during the *prographiein* moment. Through the process of considering the body as the foreground of function, the pragmatics of the architectural program become the possibilities for embodiment. By understanding the elements needed to shelter the body, the proportions associated with that shelter, are within the elements the architect can control. The independent / codependent document of architectural program should identify these elements through

the process of analysis and intuition through which humans create products. The architectural program should frame the physical elements and conceptual narratives needed for an architectural composition, articulating the expected situations that can occur within and around a building.

Square footage calculations, bubble diagrams, performance metrics and lists would become strategies for architectural composition for individuals to inhabit the multi-dimensional landscape. As buildings age, memories of functions and performances would overlay themselves on new functions and performances.⁵³ "Judgments of rightness of a building as a work of architecture (of how well it works as a work of art) are often in terms of some sort of good fit – fit of the parts together and of the whole to context and background. What constitutes such a fit is not fixed but evolves...fit may depend upon what is expressed or denoted or referred to via complex chains."⁵⁴ The program should provide clarity to Goodman's chains of meaning that exist before an architectural project begins, in order to provide more multivalent chains of

52 Rykwert, p.81. **53** This idea was one of Venturi's original conceptual framework for *Complexity and Contradiction*. Something Venturi, Scott Brown and Izenour acknowledge a high degree of frustration with in *Learning from Las Vegas*. **54** Nelson Goodman and Catherine Z. Elgin, "How Buildings Mean," *Reconceptions in Philosophy & Other Arts & Sciences* pp. 46-47.



Database

Currently there is a new emphasis on strategies for information management, classification and database archives of building information. These opportunities present great opportunities for architects and huge downfalls. Classification is nothing new to architecture. J.-F. Blondel's *Cours d'Architecture* compiled and classified sixty-four building types.⁵⁵ Forms of classification face the danger of becoming rigid categories of order and believed to be eternal and true. Just as a classification system of building types can lead to

rigid system of architectural typologies, classifications of architectural data and functions may lead to a rigid database of programmatic prescriptions that lead to overly formulaic design solutions that fail to properly negotiate within project specific variables.

Contemporary architectural programs often are created from various forms of databases. For example, healthcare projects and laboratories leverage databases not just to track the various pragmatic spatial needs of a project, but also the medical and scientific equipment needs of the program. Healthcare and laboratory planning is a subset of architecture, where a good planner can make or break the success of an individual project, or even a professional practice. For these types of projects, databases are used by planners to track all aspects of specialized equipment, including their spatial, mechanical, electrical and safety requirements, as well as initial and life cycle costs. Database and algorithmic opportunities to study architecture are infinitely valuable tools for understanding

integrated building performance. Yet, the claims that the database will replace traditional paper based architectural drawings appear to be somewhat overblown, because these claims mostly come from software vendors. The architectural tools of *iconographia*, *orthographia* and *scenographia* (plan, section, and three-dimensional representation) have served architects well for a couple of millennia now, and they continue to provide excellent abstractions for understanding building composition.

Nonetheless, the database is a new cultural product within the network of our contemporary culture, and as such, it will affect other cultural forms – including architecture. We are just at the beginning of understanding how important the database and other digital strategies will be to contemporary culture.⁵⁶ New media strategies go beyond the prosaic example of information management and algorithmic retrieval cited above, they also create worlds by leveraging, retrieving, presenting and re-presenting information in new ways.

In computer science, database is defined as a structured collection of data. The data stored in a database is organized for fast search and retrieval by a computer and therefore, it is anything but a simple collection of items. Different types of databases – hierarchical, network, relational, and object-oriented – use different models to organize data...New media objects may or may not employ these highly structured database models; however, from the point of view of the user's experience, a large proportion of them are databases in a more basic sense. They appear as collections of items on which the user can perform various operations – view, navigate, search. The user's experience of such computerized collections is, therefore, quite distinct from reading a narrative or watching a film or navigating an architectural site. Similarly, a literary or cinematic narrative, an architectural plan, and a database each present a different model of what a world is like. It is this sense of the database as a cultural form of its own that I want to address here. Following art historian Ervin Panofsky's analysis of linear perspective as a "symbolic form" of the modern age, we may even call database a new symbolic form of the computer age, a new way to structure our experience of ourselves and of the world. Indeed, if after the death of God (Nietzsche), the end of grand Narratives of Enlightenment (Lyotard), and the arrival of the Web (Tim Berners-Lee), the world appears to us as an endless and unstructured collection of images, texts, and other data records, it is only appropriate that we will be moved to model it as a database. But it is also appropriate that we would want to develop a poetics, aesthetics, and ethics of this database.⁵⁷

⁵⁶ Lev Manovich makes a compelling point that we are in a very similar position with new media now that we were in a century ago regarding cinema. ⁵⁷ Lev Manovich, *The Language of New Media*, MIT Press, Cambridge (2001), p. 218-219.

As a cultural form, transnational culture is in a similar situation to the circumstances western culture was in a hundred years ago with its relationship to cinema and photography. The entire impact of these new digital cultural forms is unclear, but we know that we cannot go back to a previous era. Manovich's account of digital technologies and database symbolic forms is incomplete. What he is proposing is a beginning account of the cultural impacts of new media on culture. That is something that was not created until much later in the arc of technological development of photography and cinema.

Technology has always played a key role in constructing culture. From the refinement of bronze casting techniques, to the invention of the steam engine, technological advances always change and disrupt the social order. Our contemporary culture is no different. Technology, mechanical or digital, is

not the world and cannot create an entire world by itself; particularly a world that is to aspire to human values.

Within the realm of architecture the role of digital technology is a centerpiece of debate ad nauseum. The conversation divides generations, practicing architects and academics alike. In this case, the database is the prevalent form of digital technology disrupting design thinking and professional practice.⁵⁸ One key fact that is often addressed, yet poorly articulated, is that the human brain does not function the way digital technology operates. The "trained mind" of an architect creates and processes information in a very different way than any form of software.⁵⁹

We thus return to the role of human judgment and conceptualization with a new tool; a tool whose power is radically disruptive to our current world, but a tool that still

58 The database is represented in the form of Building Information Modeling. Acquiring the skill set to create, manage and leverage these database is quickly becoming a prerequisite for engaging professional practice. It creates an additional level of skill an individual must acquire in their training to become an architect. If this opportunity is seized, leveraging this information opens a new world to architects to demonstrate their ethical stewardship of the built environment. If it is not, architects will continue to find themselves on the margins of the construction industry, and culture in general.

59 Michael Benedikt, *God, Creativity, and Evolution: The Argument from Design(ers)*, (2008) Centerline Books, Austin, Tx. Benedikt writes, "Although it receives structured information from the environment through the senses, the brain depends on high levels of noise and redundancy in its circuits, as well as upon structural variability both within and between different brains at the neuronal level." Benedikt's trained mind relies on a messiness and redundancy to conceive in the imagination, the database relies on an efficient algorithm to sort massive amounts of information. The brain's process is evolutionary, the database is efficient.

requires judgment. Perhaps Joseph Rykwert stated it best when he wrote:

The dream of certain Utopian designers who thought that the time would come when the anthropometric and technical data would simply be fed into a computer to be processed into a complete specification for a chair is turning out to be chimera. Given a set of data of the kind I mentioned, the computer could – in theory – produce an infinite number of specifications; which means that it is pointless to feed this kind of information into a computer at all. What a computer can do for a designer is to produce a rapid check of a given specification in terms of cost in relation to material and manufacturing process. The mechanized analytical proposition, therefore, does not narrow down the designer's field of decision appreciably; particularly since a specification must be made before it can be checked and, for the sort of purpose that is being considered here, the specification is the design. The computer, therefore, operates on the design once it has been formulated.⁶⁰

In the quote above, Rykwert was writing about the design of a chair. Today, he could just as easily be writing about the creation of an architectural program, or the design of a building and all of its systems. This strategy will work from the first collection of program data, until the building is in

operation and beyond.

Returning to the topic of the architectural program, the brief is a unique independent/co-dependant document that frames the elements which an architect can control, it establishes the criteria an architect must consider, and generates the conceptual criteria for reflection by the architect. It is a document that functions independently; hence it goes through the same methods of analysis and intuition that any human creation goes through. The pragmatic nature of the program often leads to the need to understand technical requirements of a building. These technical requirements are easily organized in a database structure.

Regarding the example of the chair, the database would not be limited to a post-evaluation of the final chair. The initial database could simply consist of human dimensions and upon completion of each design iteration of the chair, the database would check the design specification to verify the intended design objectives.

⁶⁰ Joseph Rykwert, "The Sitting Position – A Question of Method," *The Necessity of Artiface*, p. 24.

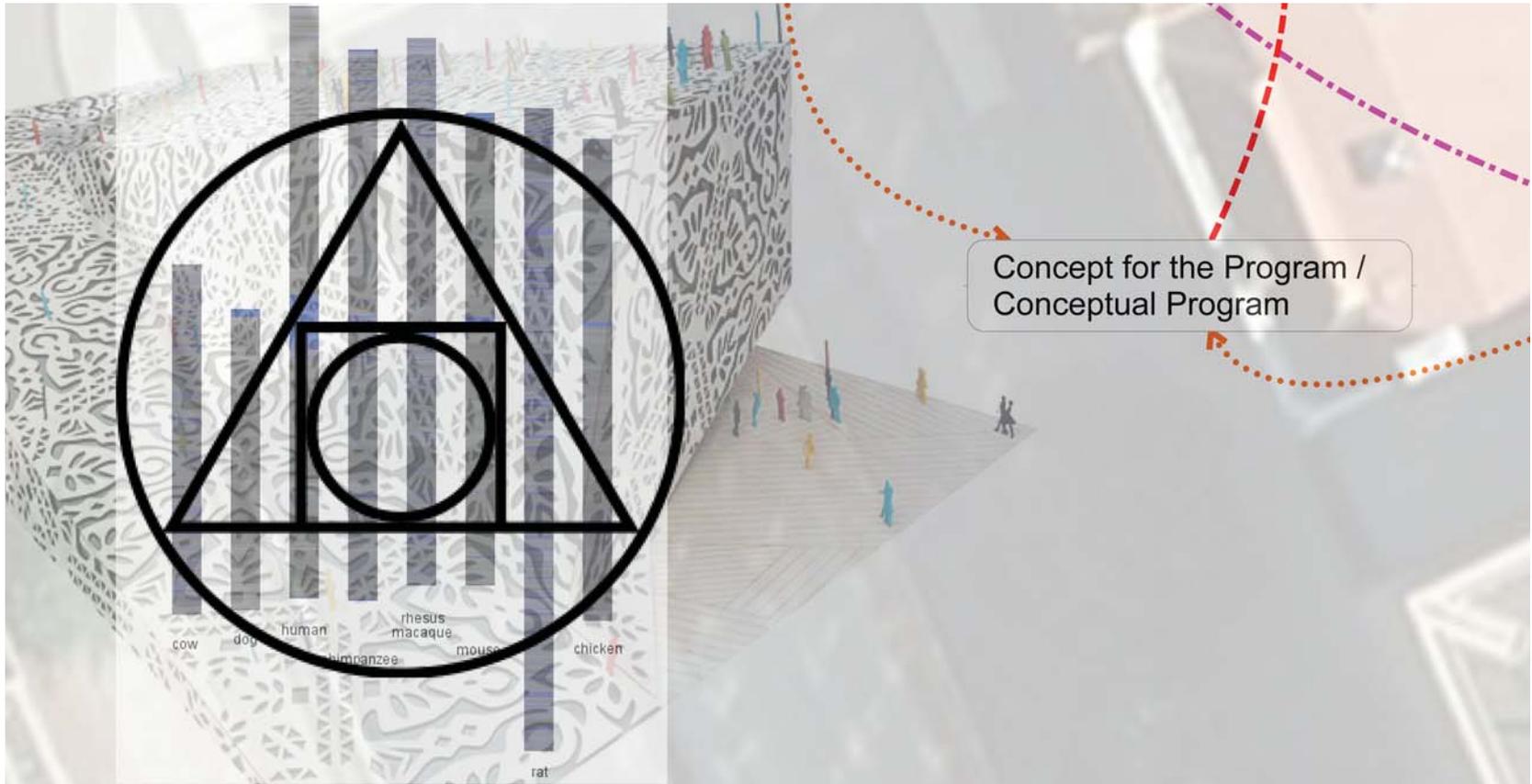
This form of programming may then be used as Rykwert suggests – using the technical information within the database to check the specification of the design of a building. The conceptual narratives conceived of within the technical requirements may be expressed with new media objects, and express the poetic nature of the database as a cultural form. These narratives are much more subjective and not wholly tied to simply being a specification. Within architecture, information about buildings is often housed in digital model representations of the building.⁶¹ This most directly applies to the account of items the architect can control such as square footages. This form of checking also may apply to things the architect must be aware of and elements the architectural proposal should negotiate with during the design process. As the building is designed through an intuitive, iterative process, the design that is documented by the database and can be analyzed for performance goals established in the program. Leveraging weather and other environmental data, design concerns such as shading, energy consumption, resource consumption, daylighting, acoustics and right-to-light analysis, among other concerns,

may be analyzed to test a design specification. This information may be used during the programming process, the design process, during construction and after the building is occupied. In fact, items that initially are identified during the programming process (such as energy consumption) are best tested after the building is occupied and in use.

The fact that a database created during the time of architectural programming may be used over and over again in an iterative process points to a unique characteristic of this new cultural form – it also serves as an archive, an interactive archive that can continually be updated through the life of the building. Thus, a document born in the *prographien* moment, documenting the technical data and possibly conceptual material for the forthcoming building, may be used to be tested in iterations during the creation of the building, and the continually re-creation of the building. The program evolves into an owner's manual. The danger is that through reductionist strategies the information in the owner's manual is mistaken for the architecture itself. Pursuing a program based upon hu-

61 Building Information Modeling (BIM) is synonymous with database.

man events, the combination of the trained hand of the architect and a fluidity of programmatic information in a database could lead to a poetic architecture. In a world of non-stop flows of information, architecture can create an opportunity for an individual to pause and reflect, and wonder. In short, architecture can still provide humankind shelter from the world and connect us to our contemporary cosmos.

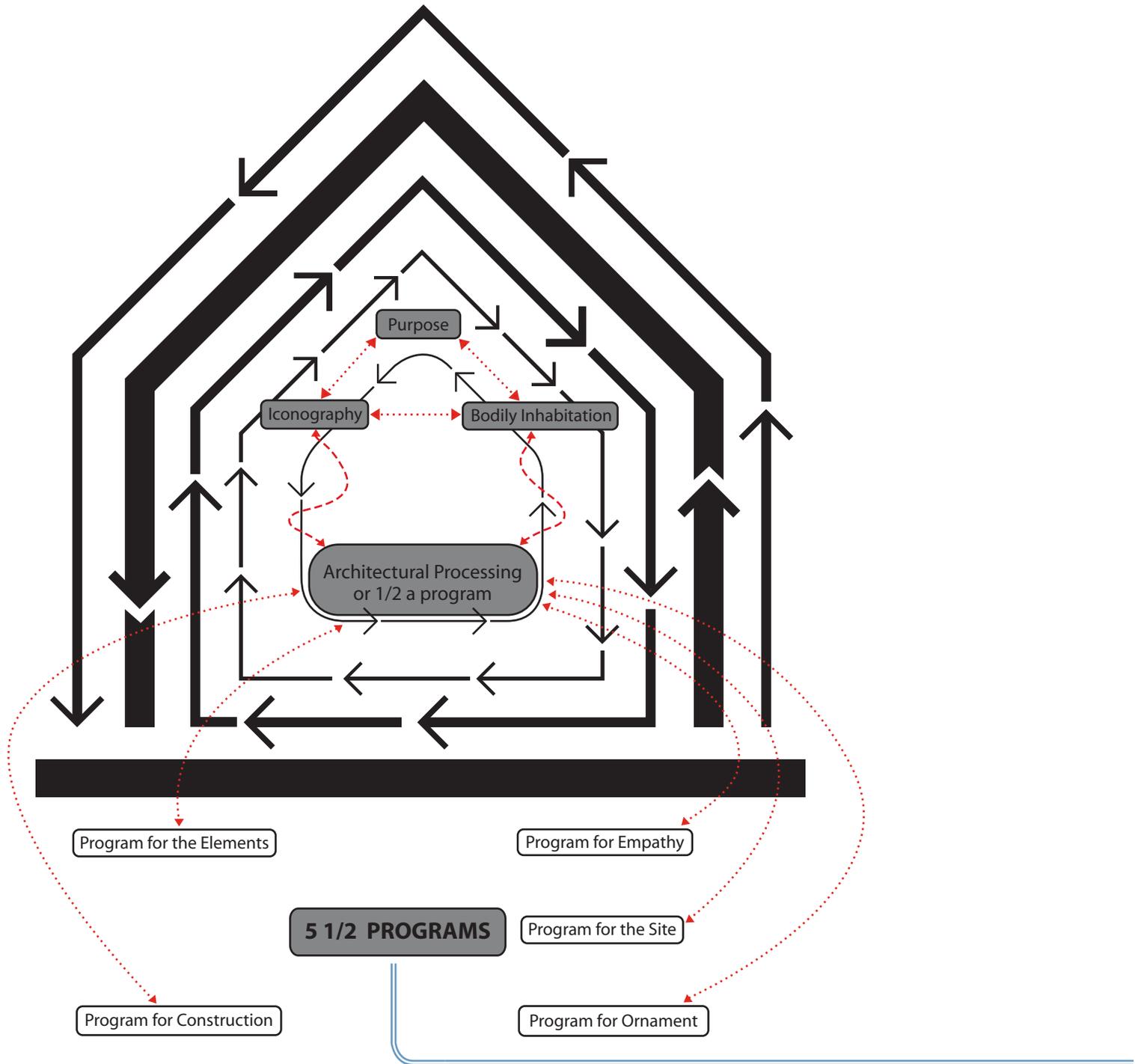


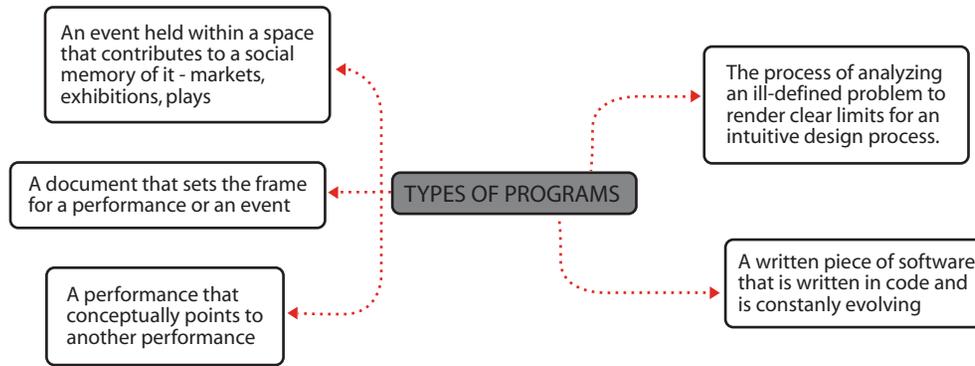
Programming/ Concept/ Case Studies

The Provisions Library is an institution dedicated to engaging our contemporary world. By embracing the positive attributes of the long view, the Provisions Library resists the short term perspective of the marketplace and demonstrates an alternative path framing our world, while serving as a network hub for social justice.

The diagrams and images in this section were used to demonstrate the pre-graphia portion of the project.

This program(s), and this project seek to embrace the Provisions Library's institutional mission of social justice within our contemporary world, and embody the perspective of the long view.





Program for the Elements: The building will demonstrate a relationship with the four elements of earth, air, fire and water.

Program for Empathy: The building will show empathy towards its community.

Program for the Site: The building will celebrate the uniqueness of the site on which it rests.

Program for Construction: The building will embrace different scales of construction.

Program for Oranament: The building will establish a poetic narrative through oranament.

1/2 a Program: Processing will contingently assemble, and reassemble, these programs.





Conceptual Ideograms:

The images were created to intuitively study the unique problem of designing for the Provisions Library.



36





CASE STUDY #1: Philadelphia Savings Fund Society Building (PSFS) by William Lescaze and George Howe, 1932.

PSFS is an excellent example of a building that embraces the street, and the skyline. The building's T-shaped plan a high degree of natural light through out the building. The iconography in the skyline of Philadelphia provides a symbol for the city from several vantage points.

The building is now 78 years old, and exists in the social memory of Philadelphia. It is now a hotel, but is still known as the PSFS building.





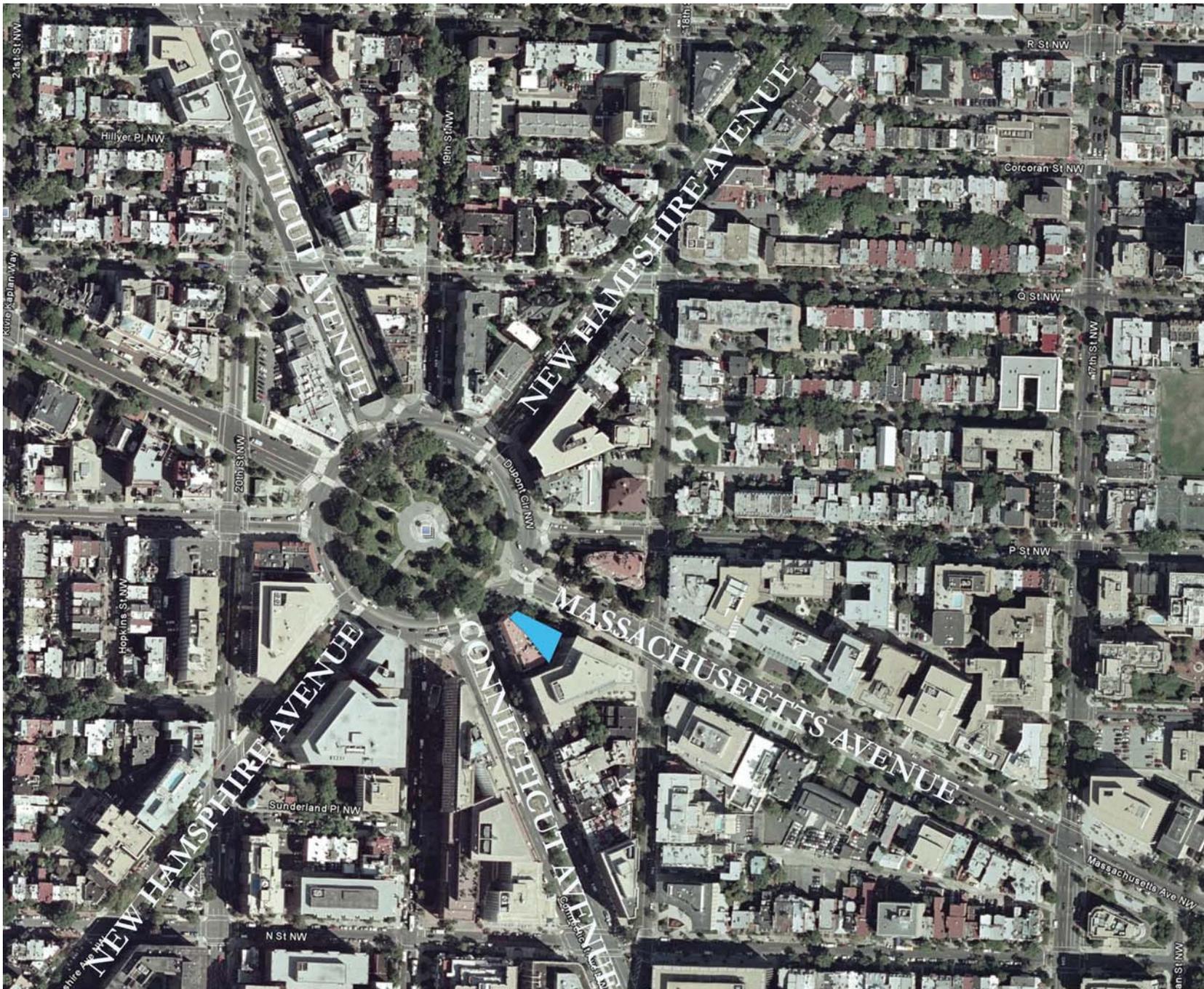
CASE STUDY #2: The Newseum, by Polshek and Partners, 2008.

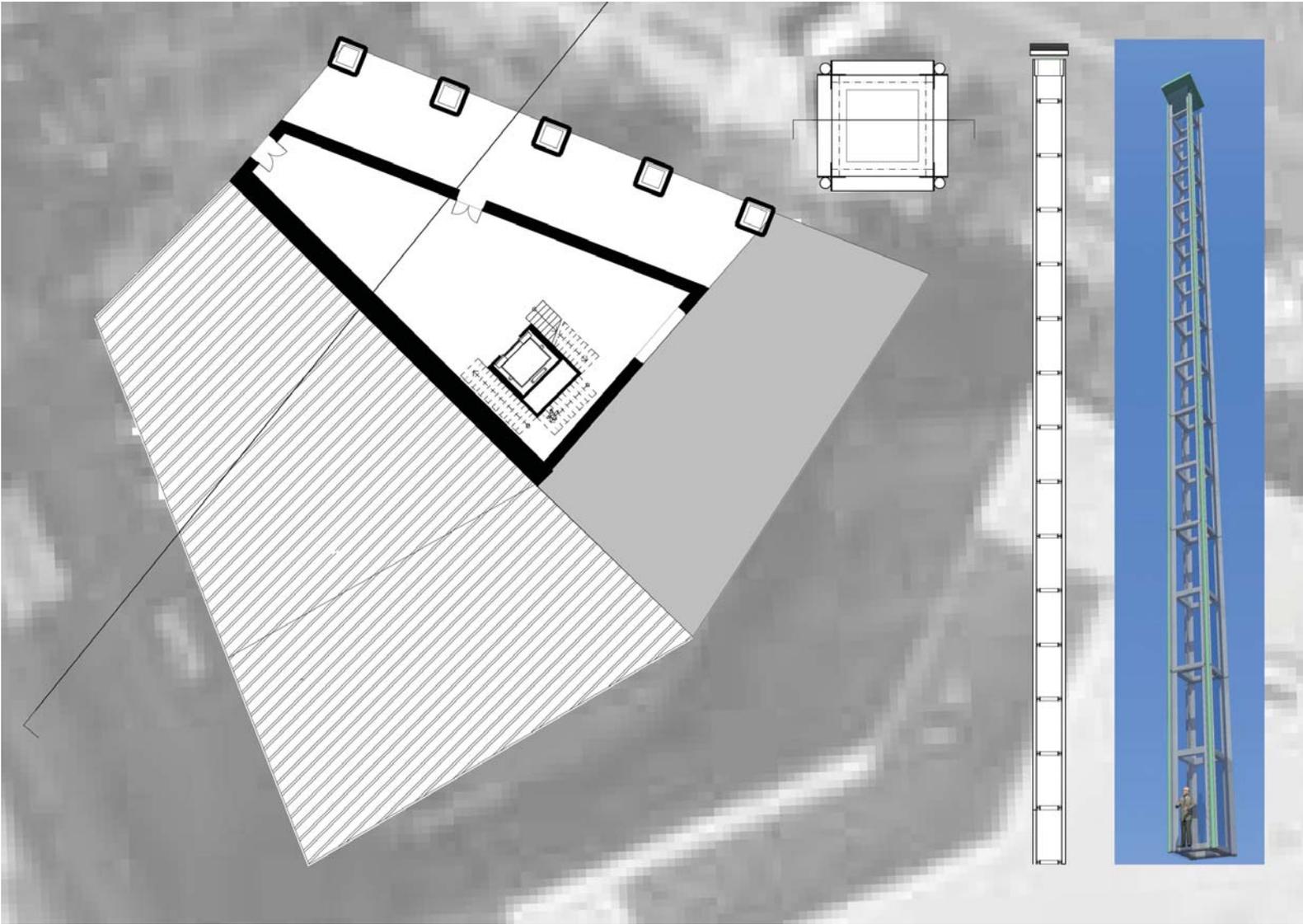
The Newseum demonstrates how contemporary construction technology may be used to volume within the composition of the building.

The building negotiates the Washington skyline, and celebrates circulation. The iconography announces the purpose of the building to the street.

Design Documentation

The Provisions Library is located just to the Southeast of Dupont Circle, at the intersection of Massachusetts Avenue and Connecticut Avenue.



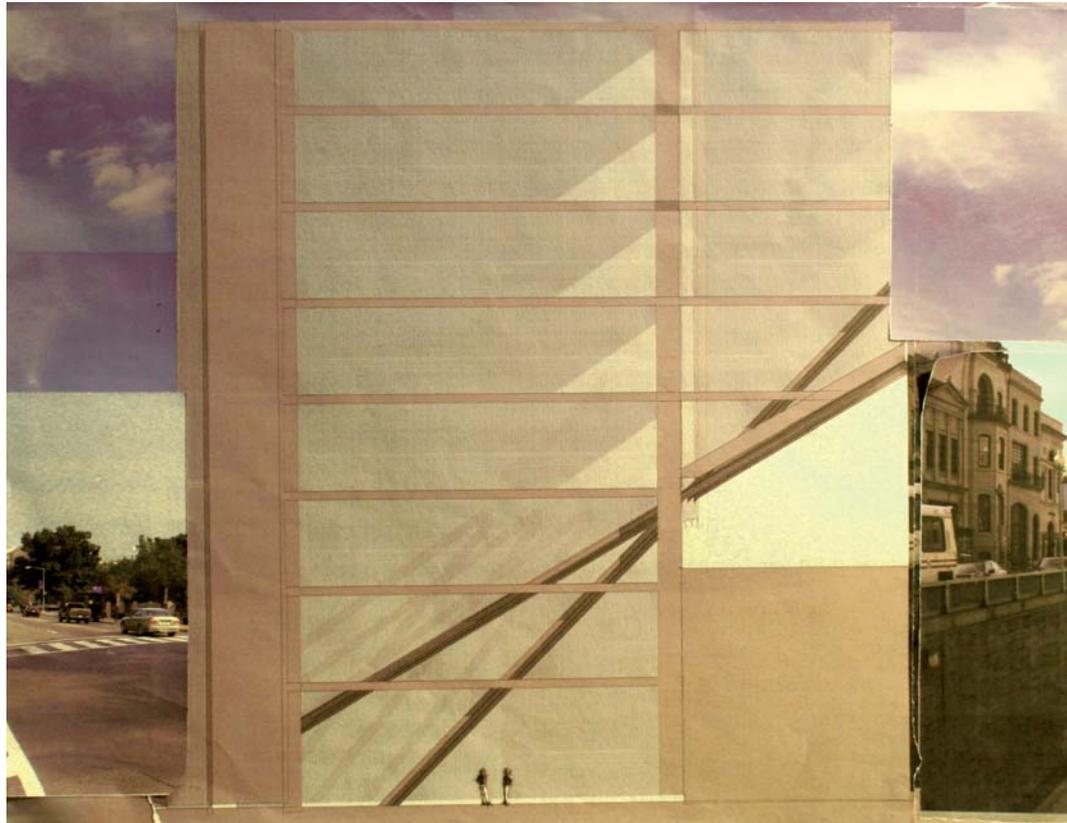




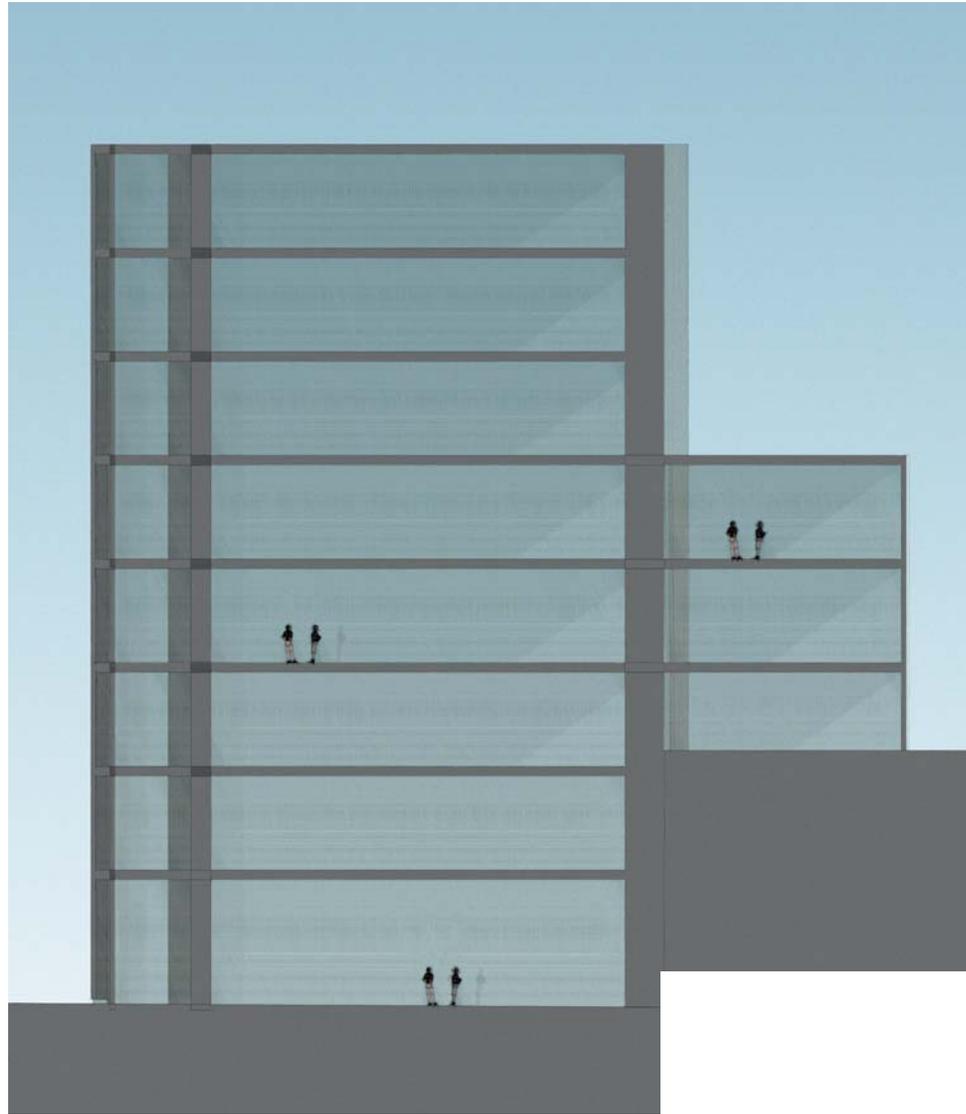
These were early studies of column and plan for the project.

Above: Plan study

Opposite page:
Early plan and column study

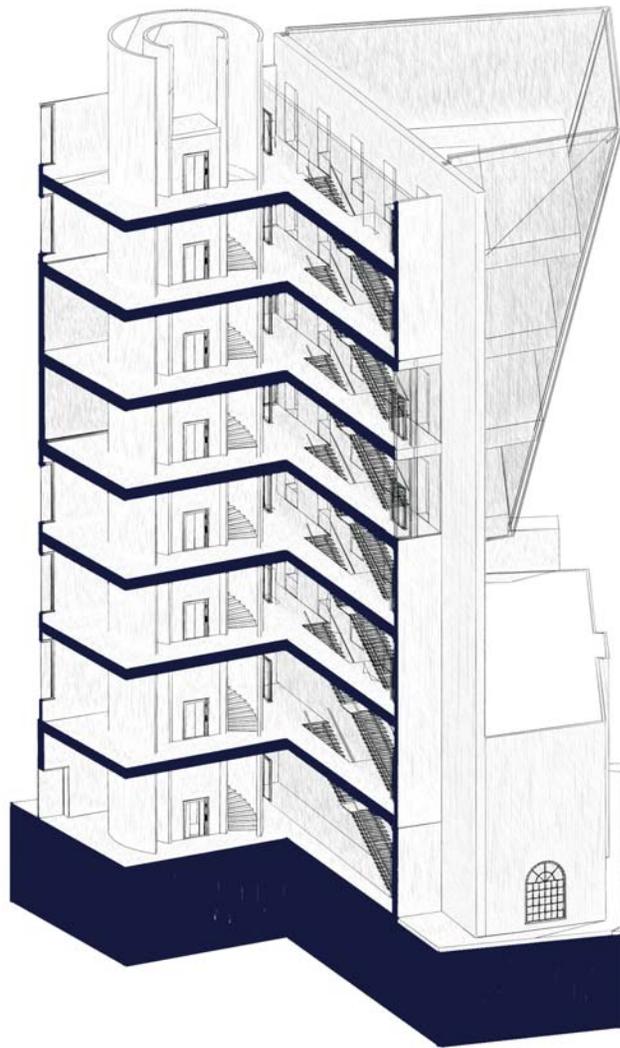


These two cross section studies evaluated different strategies of blocking and stacking the various levels of the building.



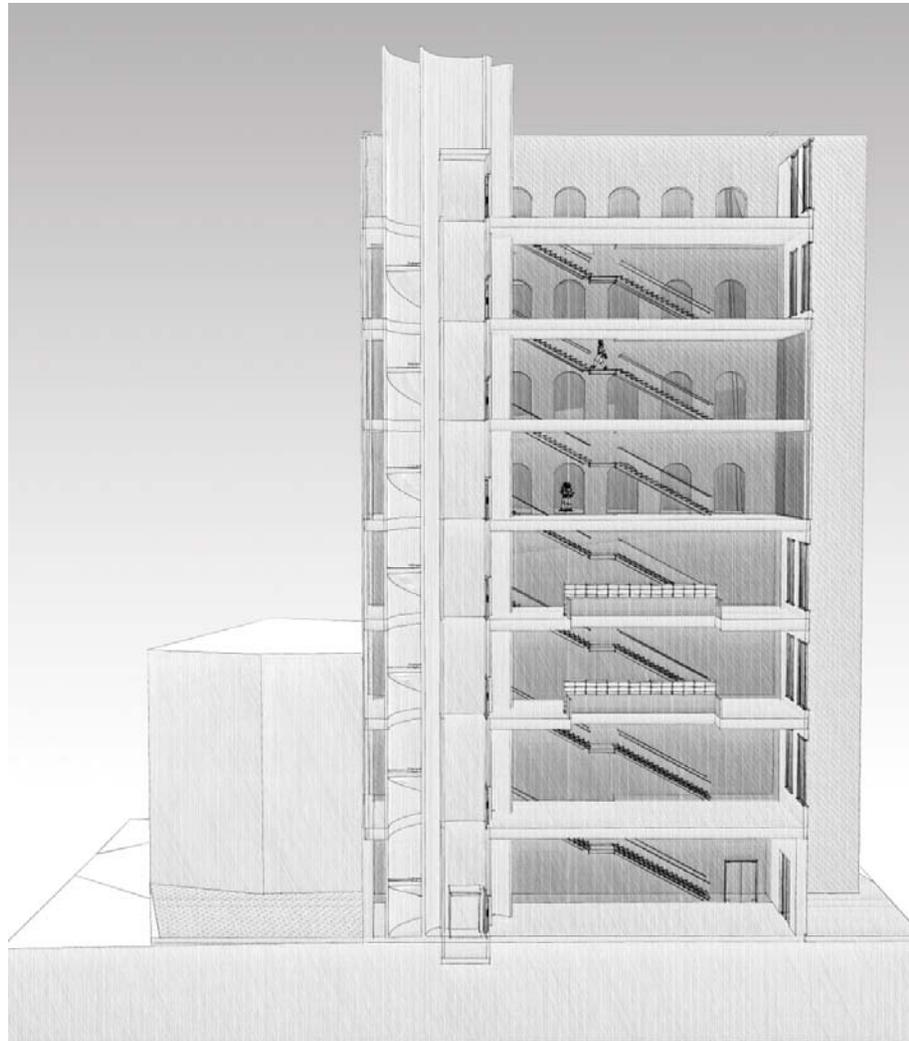
Section blocking study

Opposite page:
Early section study



Pedestrian circulation around the city is the most liberating form of personal transportation. By walking, an individual is not dependent on any institution, or market product for movement.

Circulation was studied as a central programmatic and design aspect of the project. Each set of stairs performs and symbolizes a different strategy for pedestrian circulation.



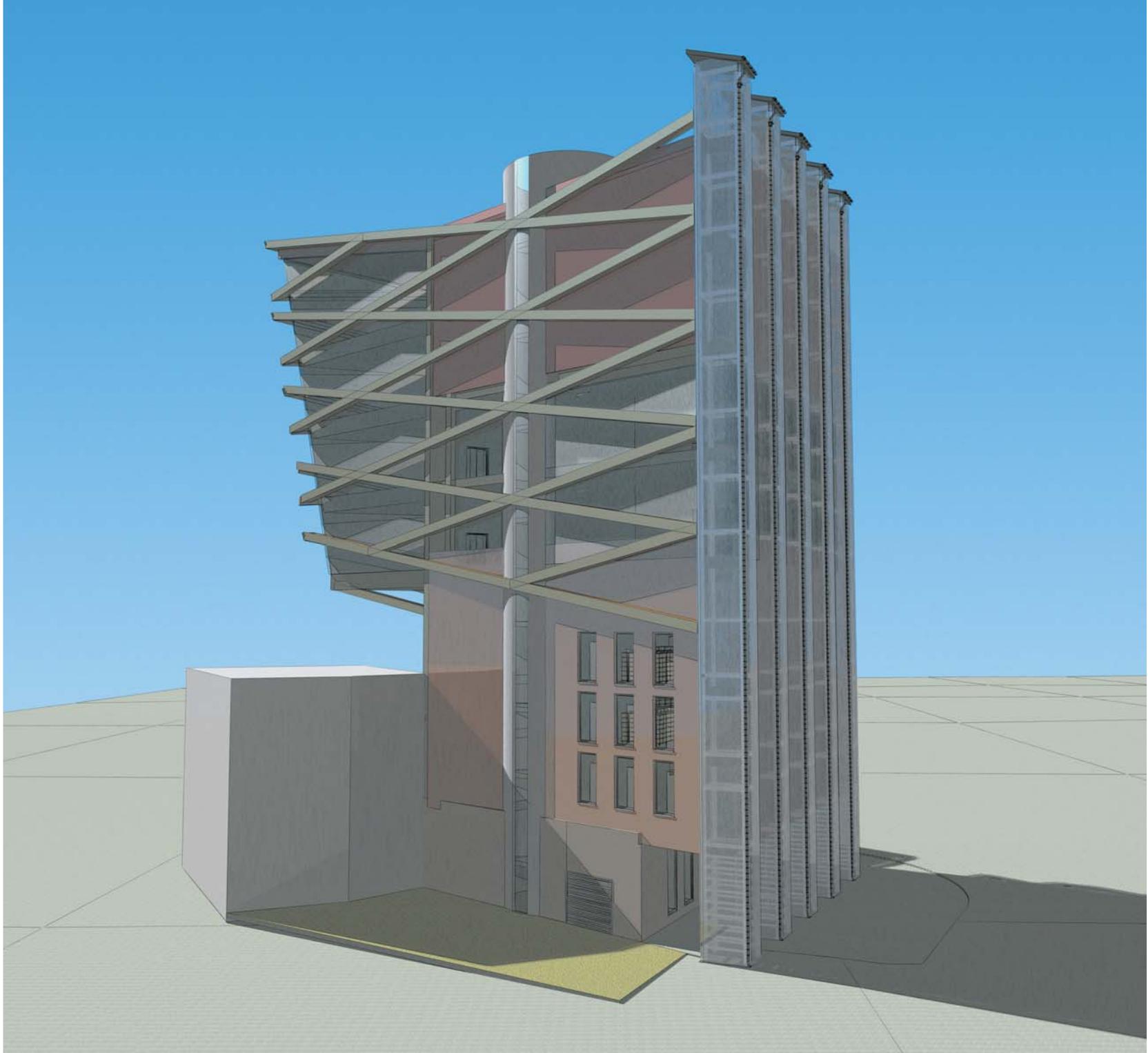
Section perspective study through library and gallery at stair wall



Section study

Opposite Page:
Study-view of building from
Dupont Circle







Connecticut Avenue column study

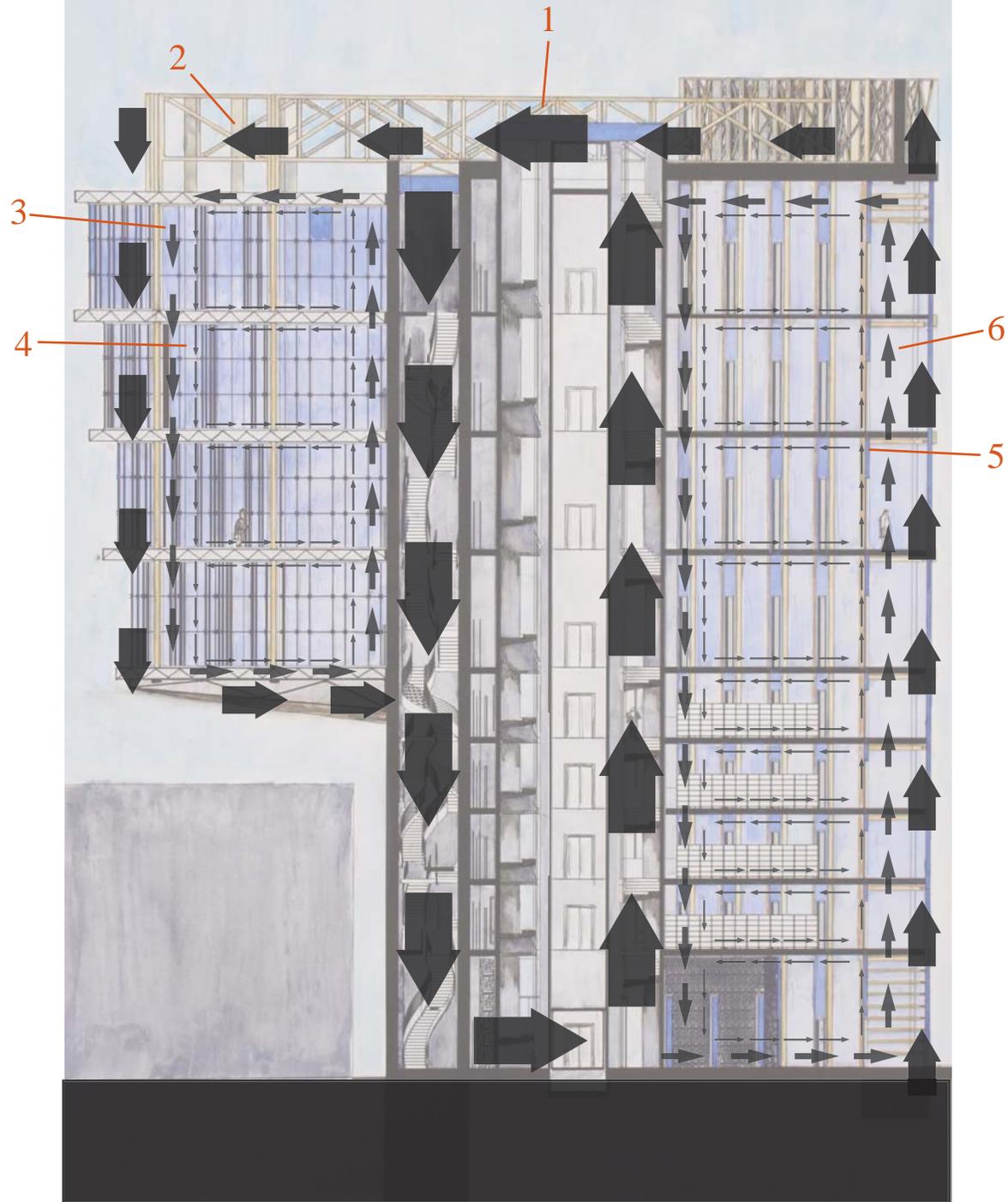
Opposite Page:
Study-view of building from
Massachusetts Avenue

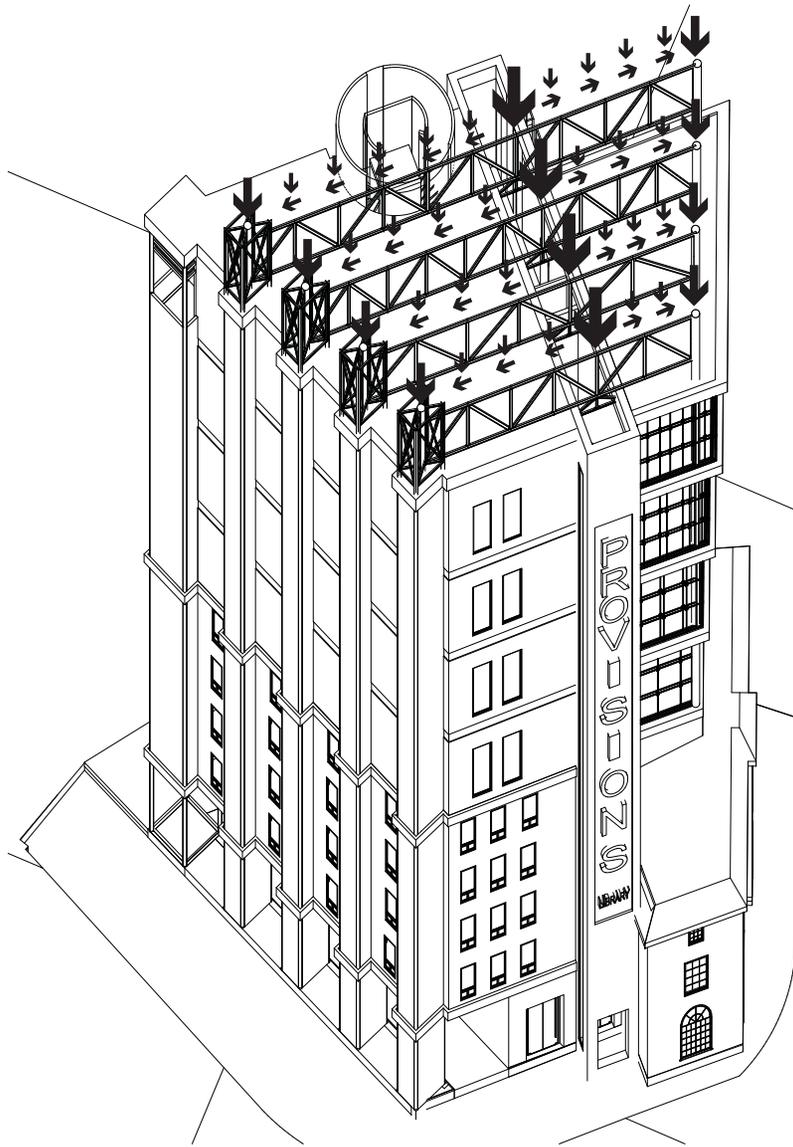


Connecticut Avenue massing study

The following diagrams illustrate how certain parts of the Provision Library are intended to perform over time and within the elements.

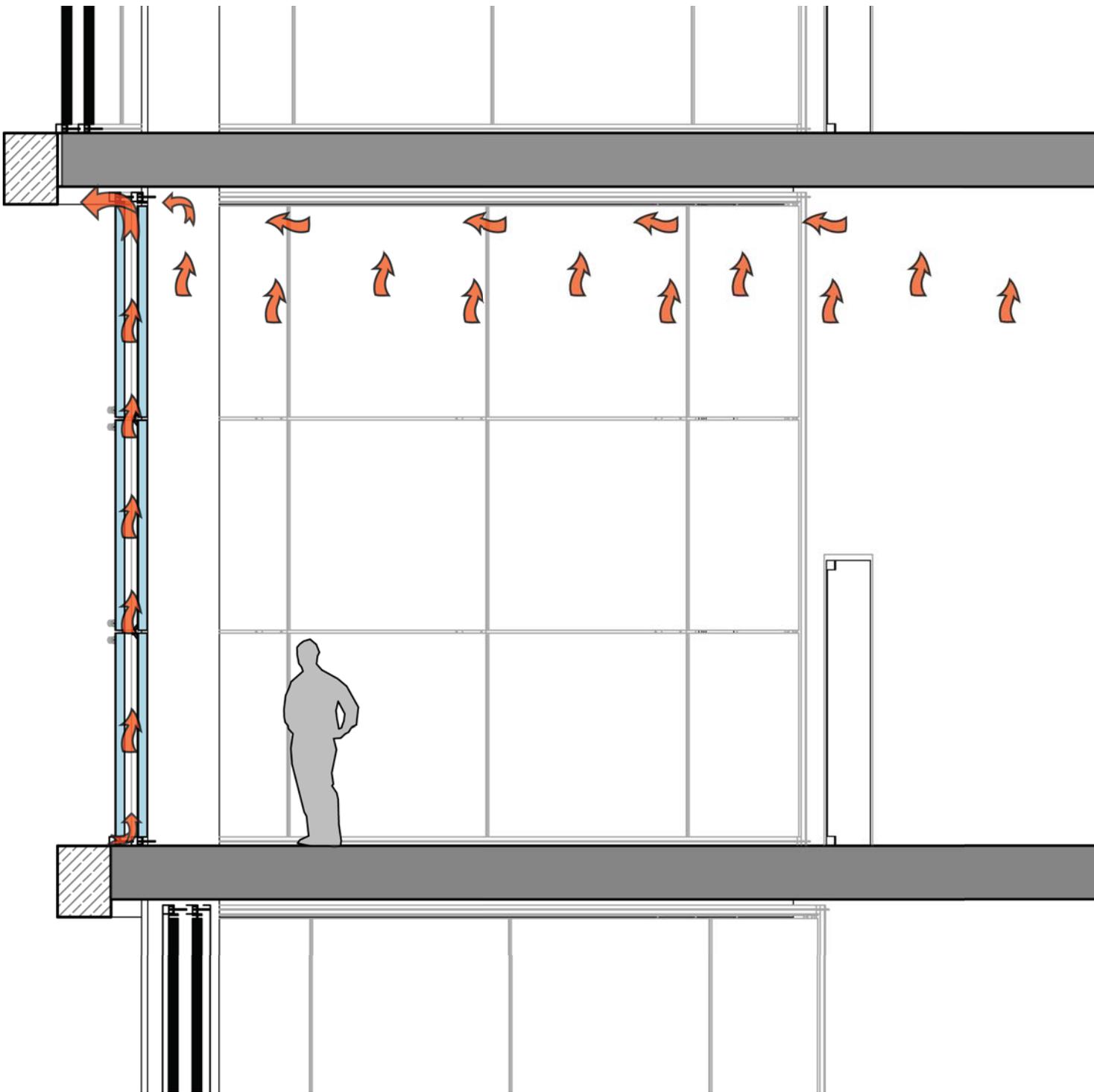
- 1 → Large, monumental concrete structure, which will experience the slowest rate of change of the building.
- 2 → The columns and trusses compose the secondary structural system of the building. Their rate of change will be slightly faster than the monumental concrete structure, but much slower than any of the exterior or interior systems.
- 3 → The overhang exterior system will present the possibility to change as high-end exterior storefront systems improve their ability to embrace and re-direct the energy of climate forces.
- 4 → The interior systems of the southern side of the building will change as needed and are expected to change with a certain degree of regularity
- 5 → The interior systems of the northern side of the building will change as needed. The programmatic nature of the gallery space implies it will change on a regular basis. The library will change more slowly, but change is expected.
- 6 → The exterior systems of the wood exterior and glass columns will present the ability to be updated as needed, depending on their ability to weather well over time.





This diagram illustrates how the structural system of the Provisions Library will embrace and redirect the forces of gravity. The empathetic embrace of the building's neighbor is supported by the truss system of the roof and the center concrete portion of the building.

Opposing page: The double-pane curtain wall system captures and redirects the heat of the climate it encounters. The air is vented out the top of the system on each floor, and pulls the heated air from the rooms of the southern portion of the building out as well.



The database that was used to quantify the design also allows us to create baseline assumptions about how it will interact with the world around it.

Though much of this information is not new, and is often common sense, the ability to explicitly demonstrate architecture's connection to other elements strengthens its ability to positively engage the world.

For example, given the square footage of the building, we can determine the deference in the building's carbon footprint according to a number of variables. In this case, we look at what type of power it buys.

The Provisions Library would have a carbon footprint of 680 tons of CO₂ annully if it purchased its power from coal.

ArchiCAD Educational version, not for resale. Courtesy of Graphisoft.



Energy Balance Evaluation

Key Values

Project Name:	Washington D.C.	Calculated heat transfer coefficients:	U values [Btu/sq ft,F,hr]
Project Location:	Multiple	Building shell average:	0.41
Activity Type:	1/24/2010 3:47 PM	Roofs:	0.01 - 0.41
Evaluation Date:		External walls:	0.08 - 0.76
Tempered floor area:	38,784.79 sq ft	Basement walls:	-
Ventilated volume:	494,889.26 cu ft	Openings:	0.23 - 0.23
Outer heat capacity:	84.28*10⁻⁴ Btu/sq ft,F		

Energy Consumption

Source	Yearly total		Yearly specific	
	kBtu/year	USD/year	kBtu/sq ft,year	USD/sq ft,year
57 % Natural gas	2382160	0	61.44	0.00
43 % Electricity	1727503	0	44.56	0.00
Total:	4109663	0	106.00	0.00



4109663 kBtu
106.00 kBtu/sq ft

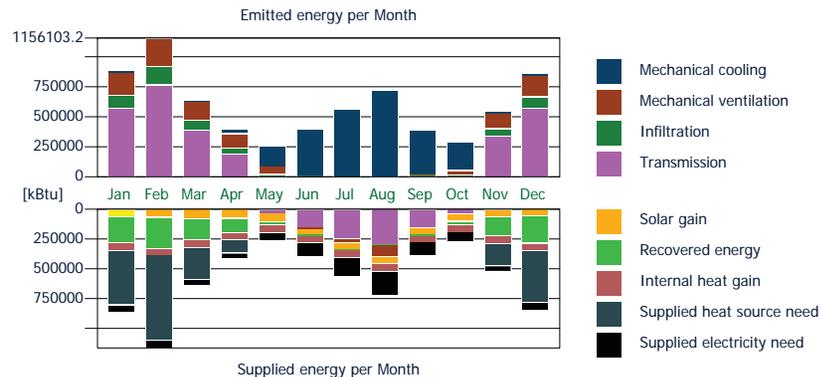
Carbon Footprint

CO₂ emission as a result of operating this building is 680 tons CO₂/year

This amount of CO₂ is absorbed in one year by 7.6 acres (roughly equivalent to 6 football fields) of tropical forest.

680

Monthly Energy Balance



ArchiCAD Educational version, not for resale. Courtesy of Graphisoft.



Energy Balance Evaluation

Key Values

Project Name:		Calculated heat transfer coefficients:	
Project Location:	Washington D.C.	U values [Btu/sq ft,F,hr]	
Activity Type:	Multiple	Building shell average:	0.41
Evaluation Date:	1/24/2010 3:48 PM	Roofs:	0.01 - 0.41
		External walls:	0.08 - 0.76
Tempered floor area:	38,784.79 sq ft	Basement walls:	-
Ventilated volume:	494,889.26 cu ft	Openings:	0.23 - 0.23
Outer heat capacity:	84.28*10⁻⁴ Btu/sq ft,F		

Energy Consumption

Source	Yearly total		Yearly specific	
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Total:	4109663	0	106.00	0.00



4109663 kBtu
106.00 kBtu/sq ft

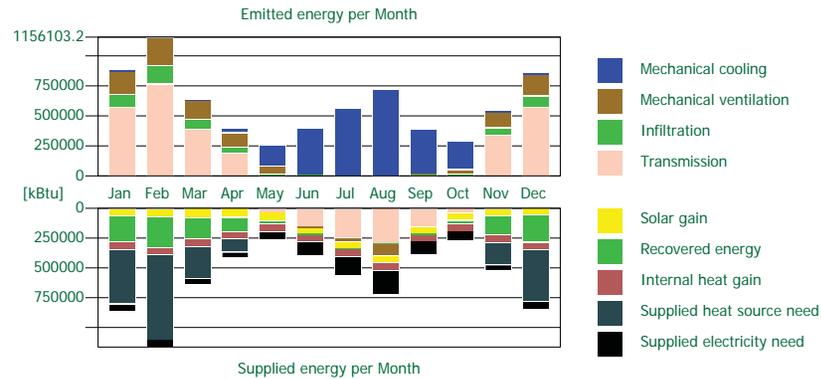
Carbon Footprint

CO₂ emission as a result of operating this building is 166 tons CO₂/year

This amount of CO₂ is absorbed in one year by 1.9 acres (roughly equivalent to 1.4 football fields) of tropical forest.

166

Monthly Energy Balance



If the Provisions Library decided to purchase its power from wind generated power, it would generate an annual carbon footprint of 166 tons of CO₂.

Finalized Concept

The context model of the site at Dupont Circle is intended to demonstrate how the Provisions Library project would engage the context of the site.

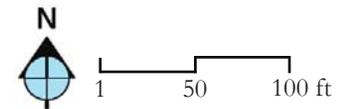
The composition of the plan of the building engages the site selected on Dupont Circle in between Connecticut Avenue and Massachusetts Avenue by shape of the site, the formal context of the neighboring buildings and the views on to the city around the building.

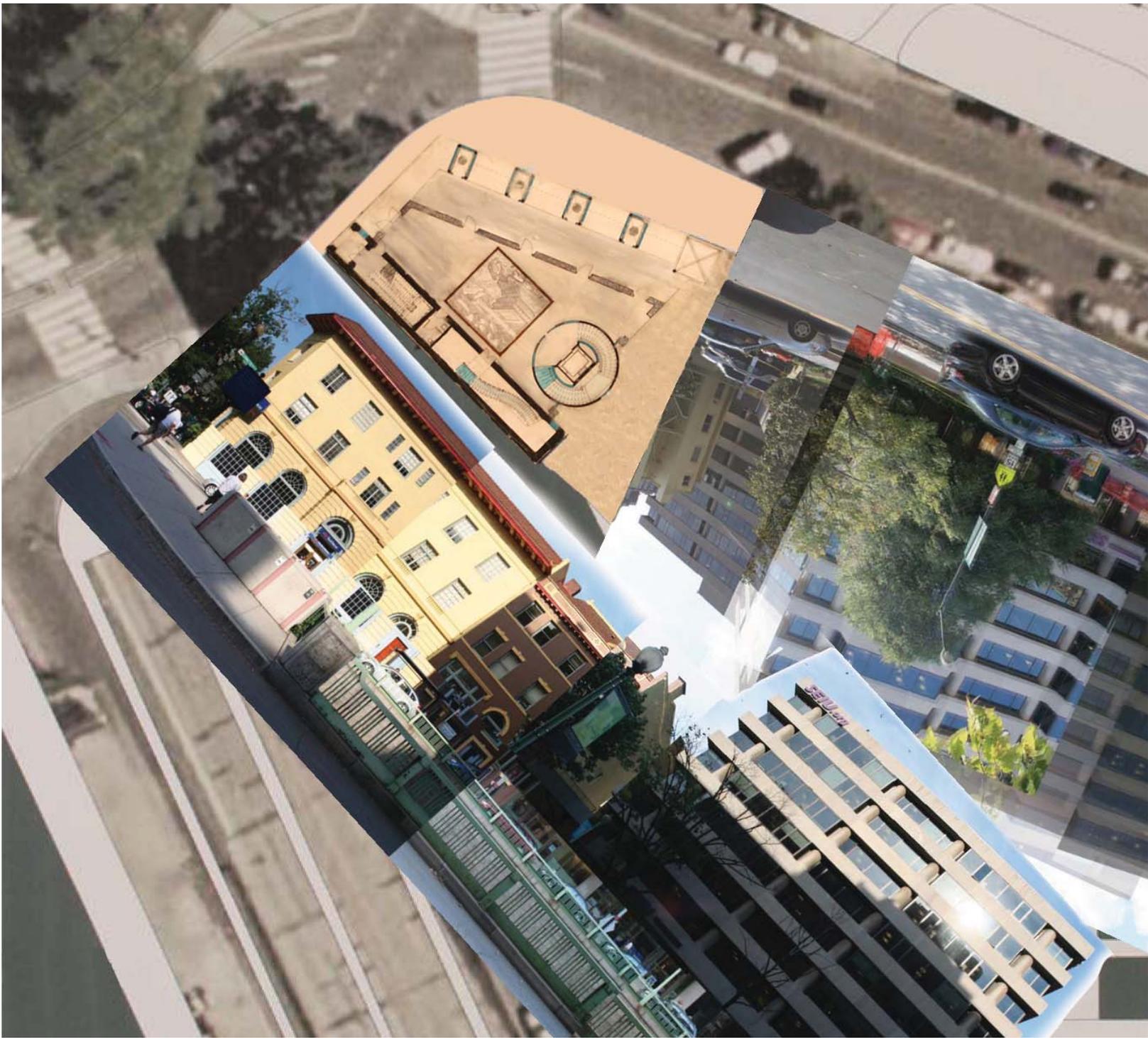
The first floor provides an open lobby and open columns bases for shelter. The second, third, fourth and fifth floors on the Massachusetts Avenue side of the building house the Provisions Library's book collection, study areas and new media collection.

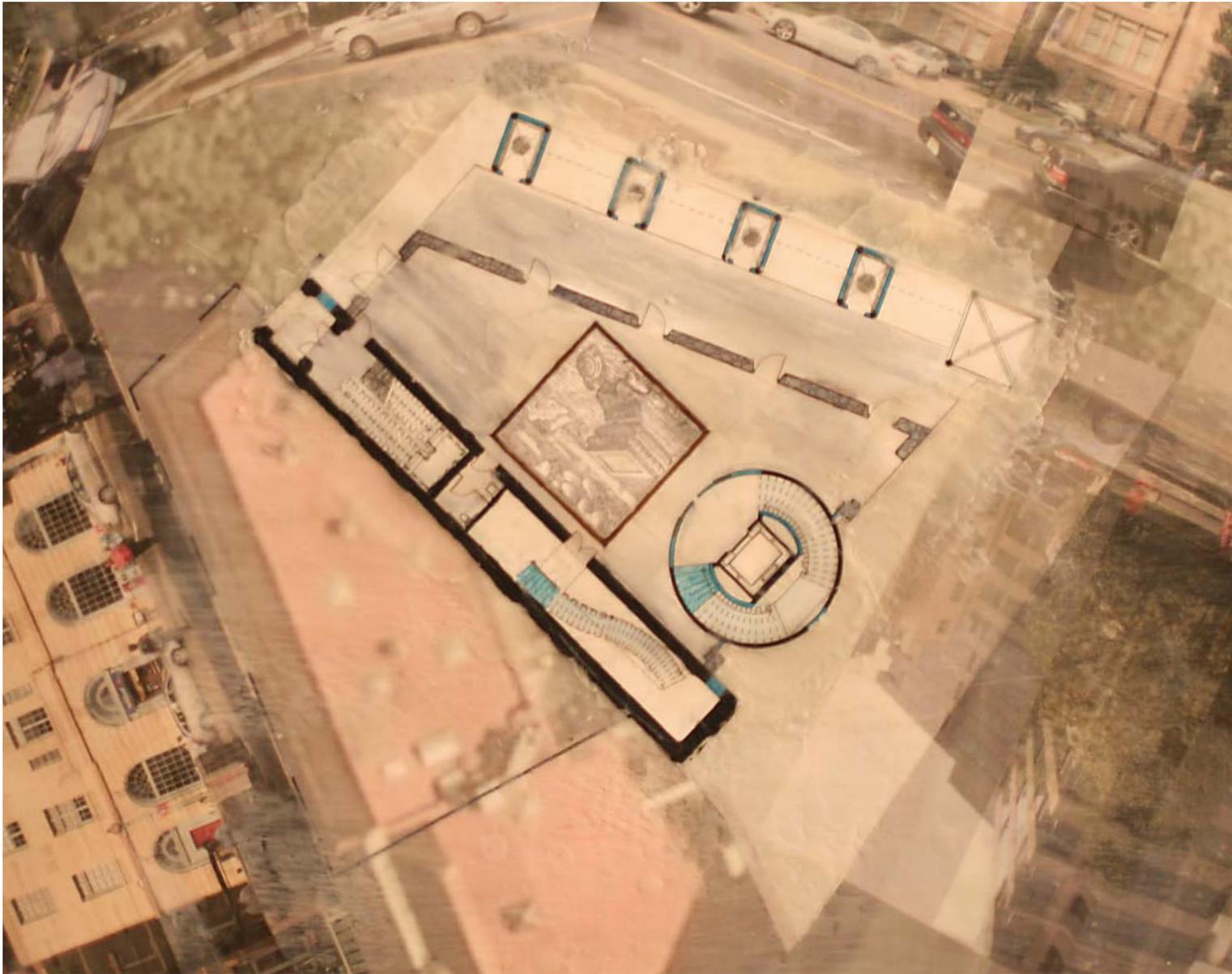
The sixth, seventh, eight and ninth floors possess a Massachusetts Avenue side and a Connecticut Avenue side.

On the Massachusetts Avenue side of these floors is the Provisions Library galleries for the exhibition of contemporary art. On the ninth floor, both sides of the building are gallery space.

The sixth floor of the Connecticut Avenue side houses a lecture hall. The seventh, eighth and floors of this side house Provisions Library staff office space and meeting rooms.





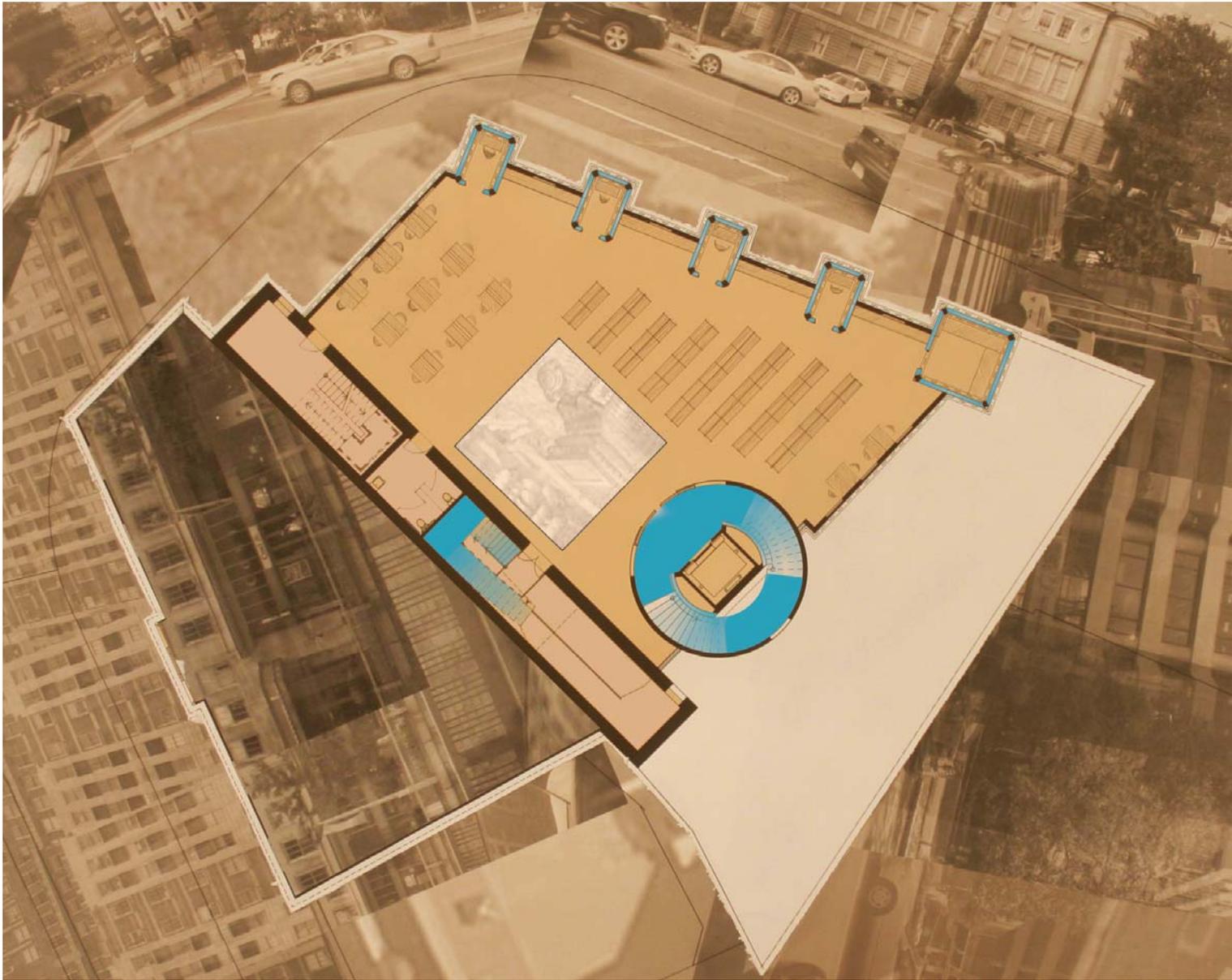


62

1st floor plan



1 15 30 ft

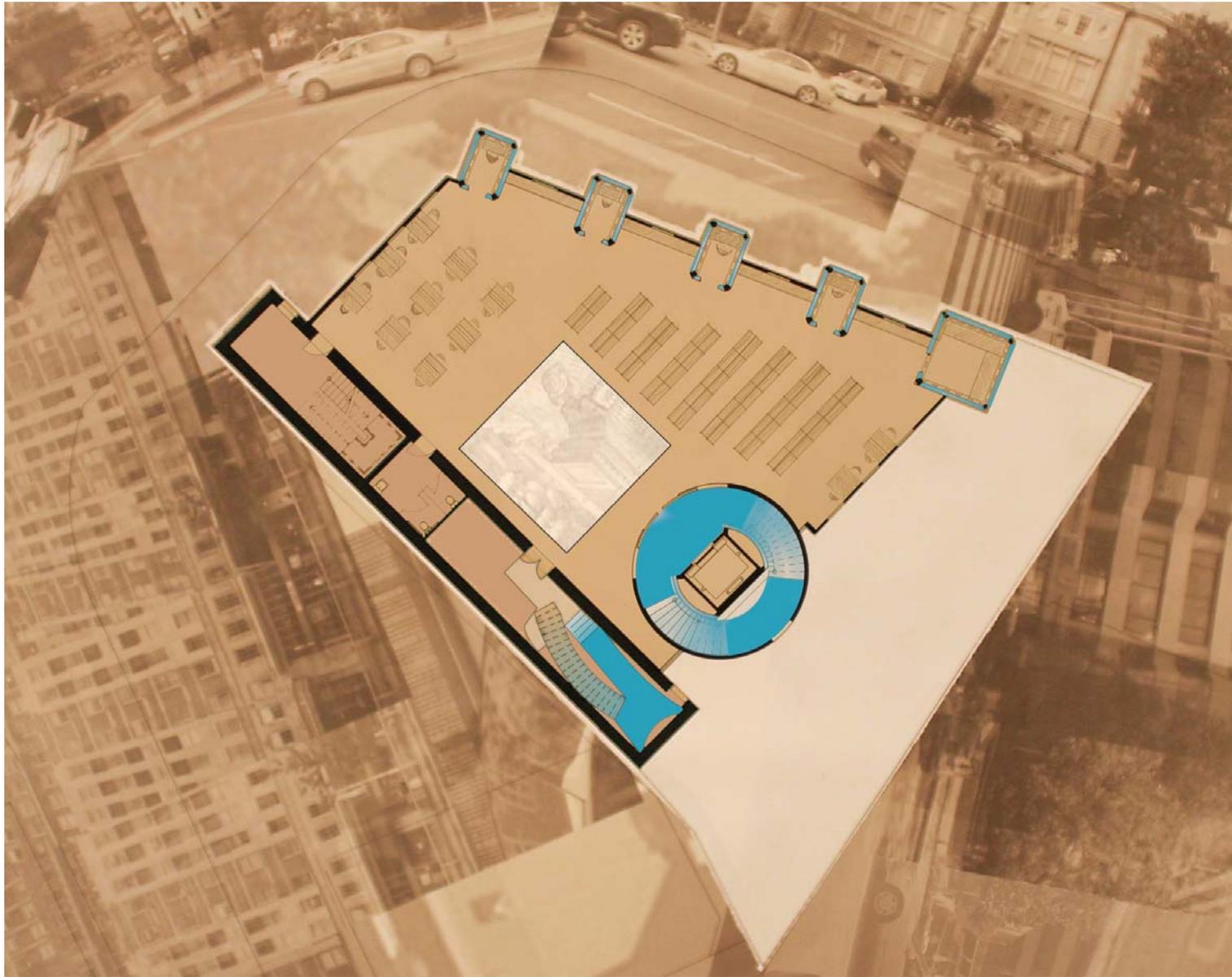


63

2nd floor plan

1 15 30 ft



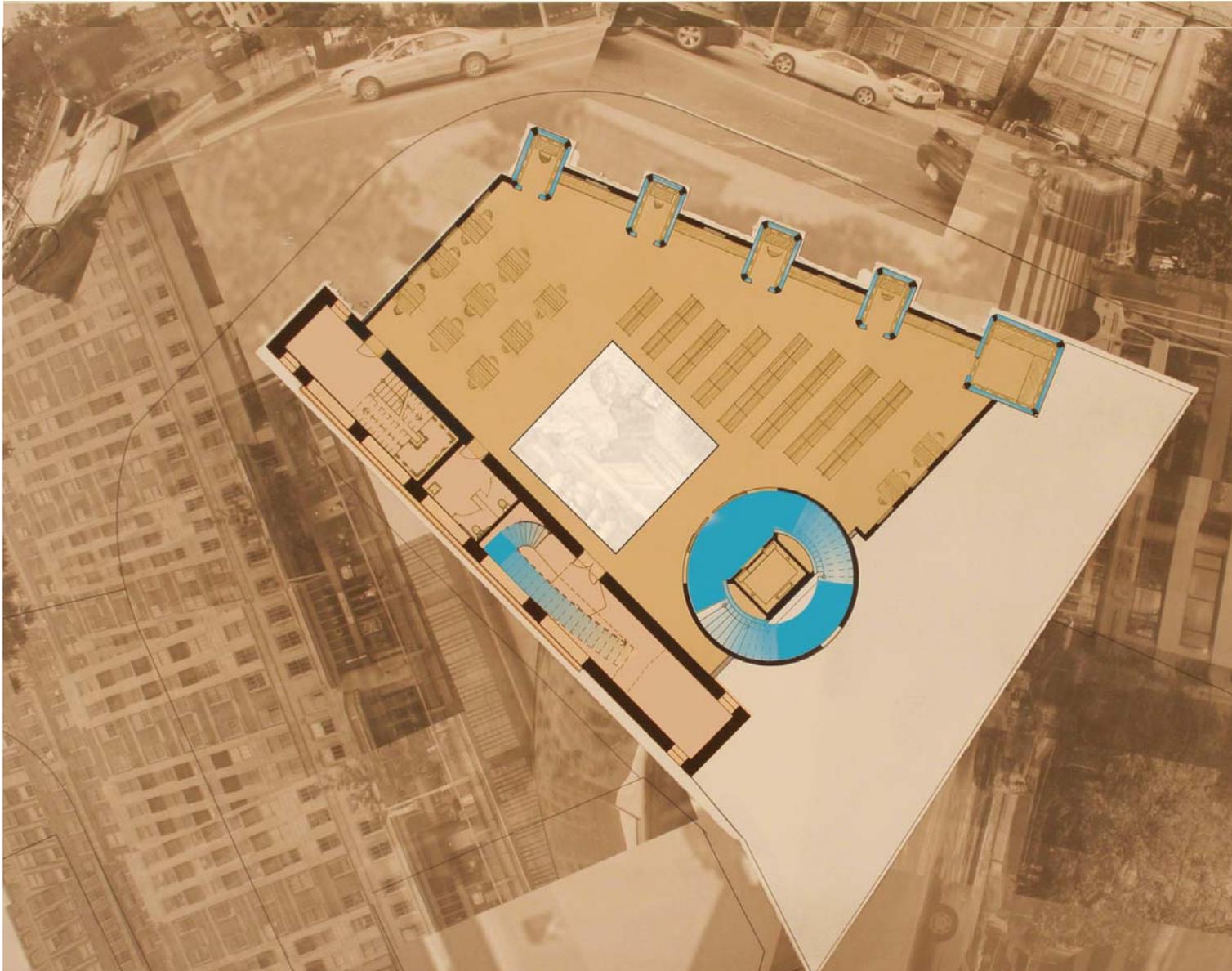


64

3rd floor plan

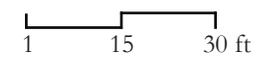


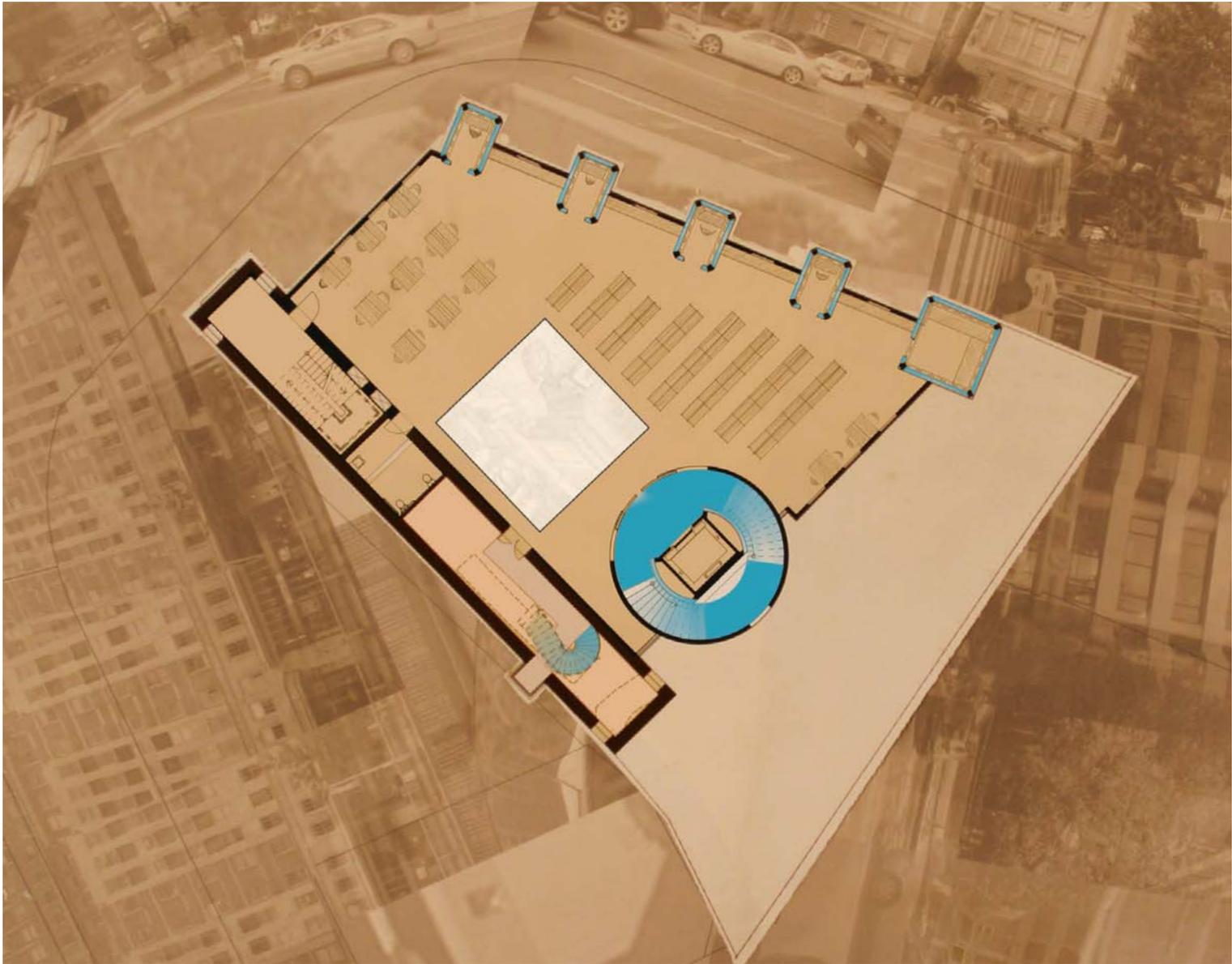
1 15 30 ft



65

4th floor plan



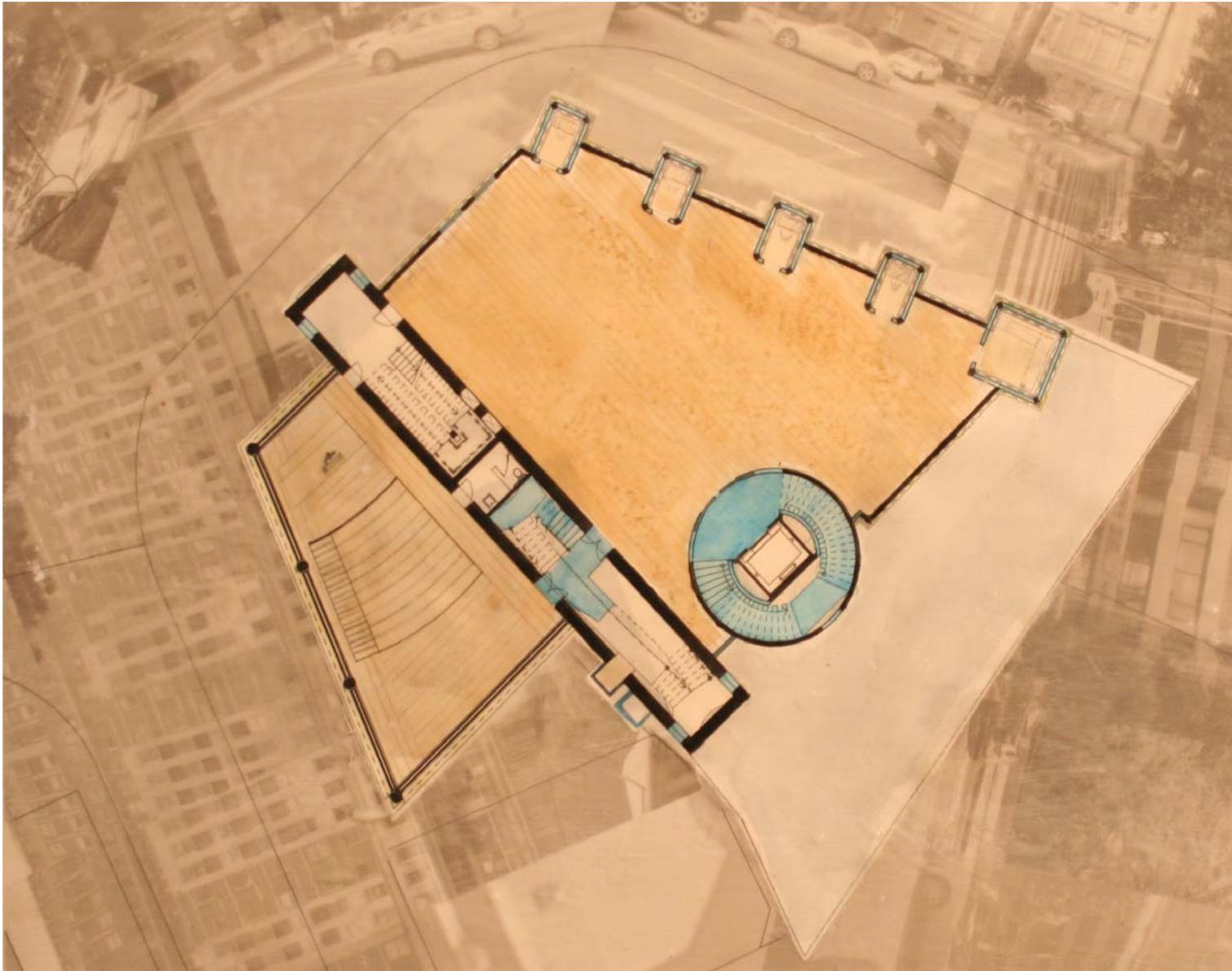


66

5th floor plan

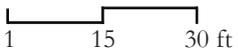


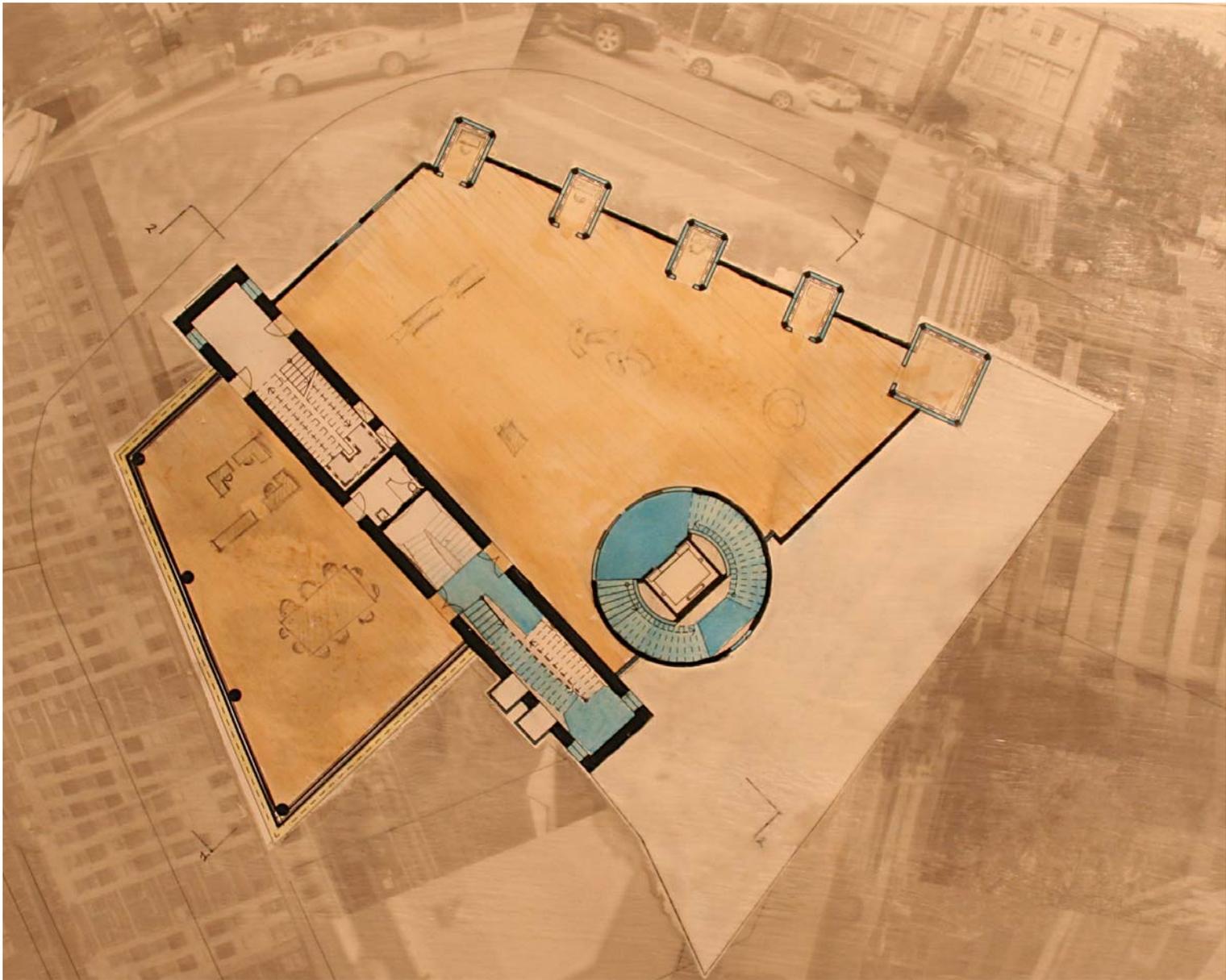
1 15 30 ft



67

6th floor plan



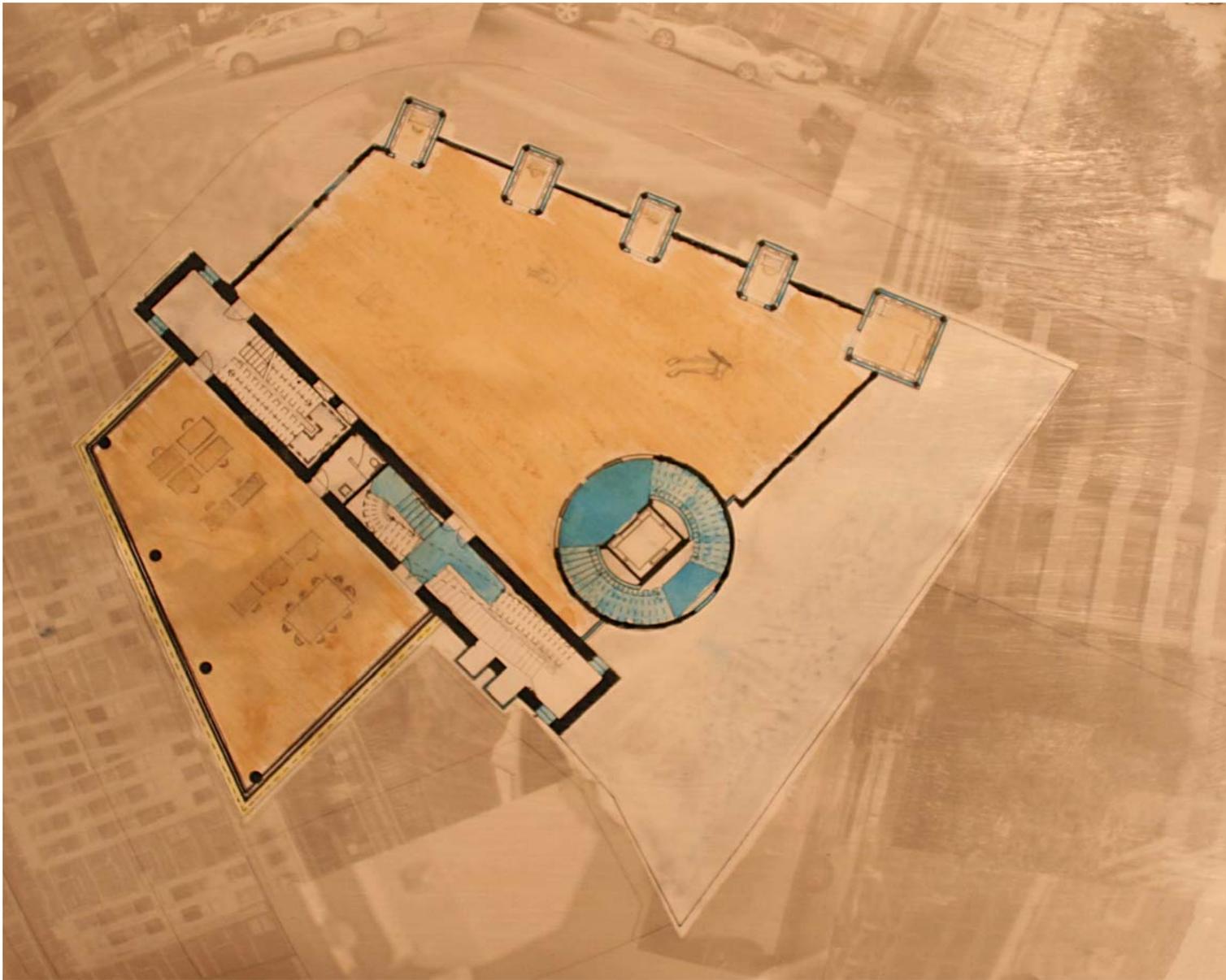


68

7th floor plan

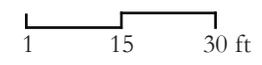


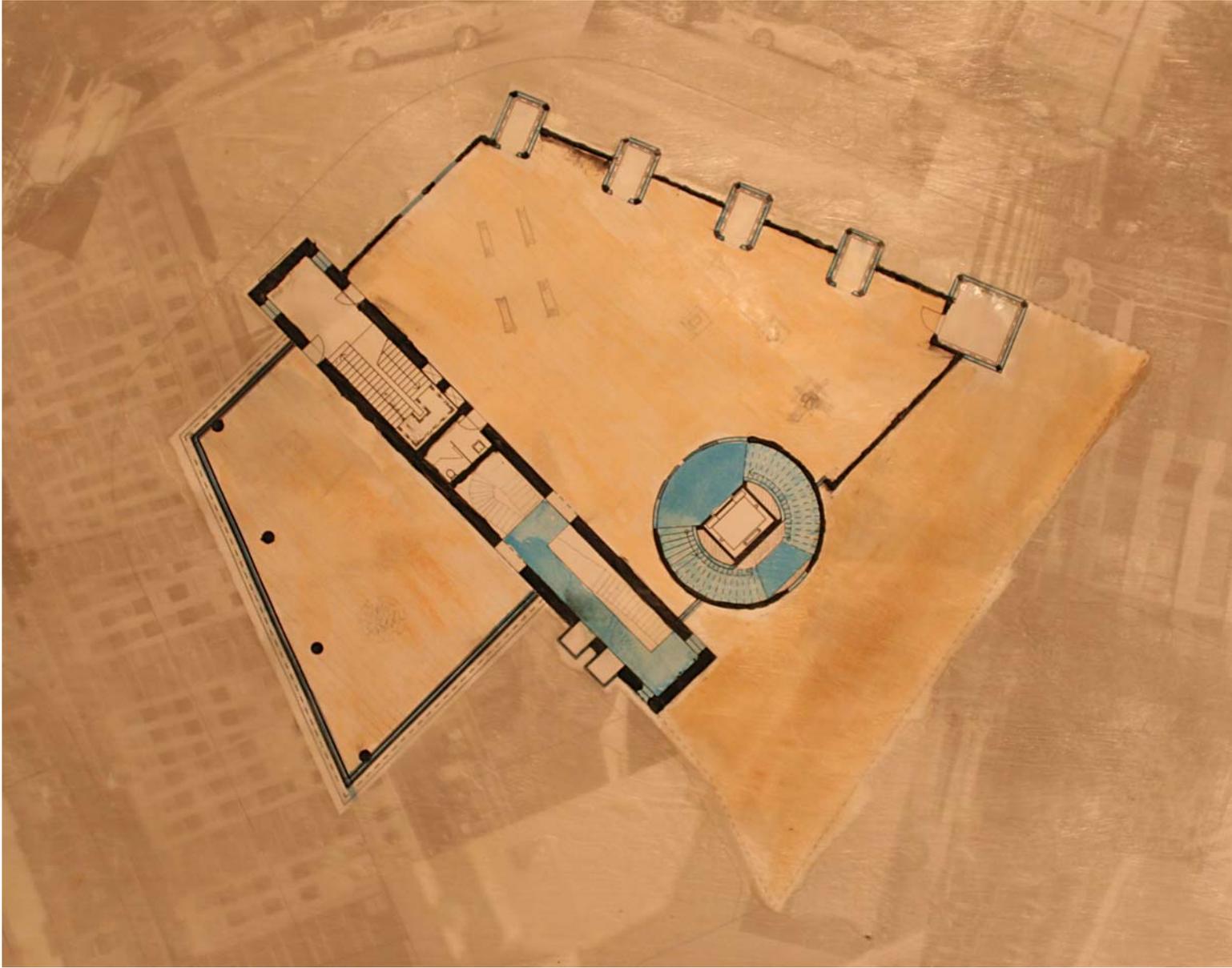
1 15 30 ft



69

8th floor plan



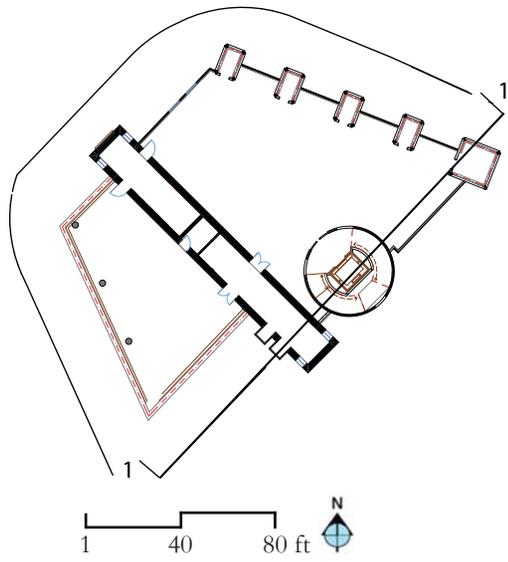


70

9th floor plan

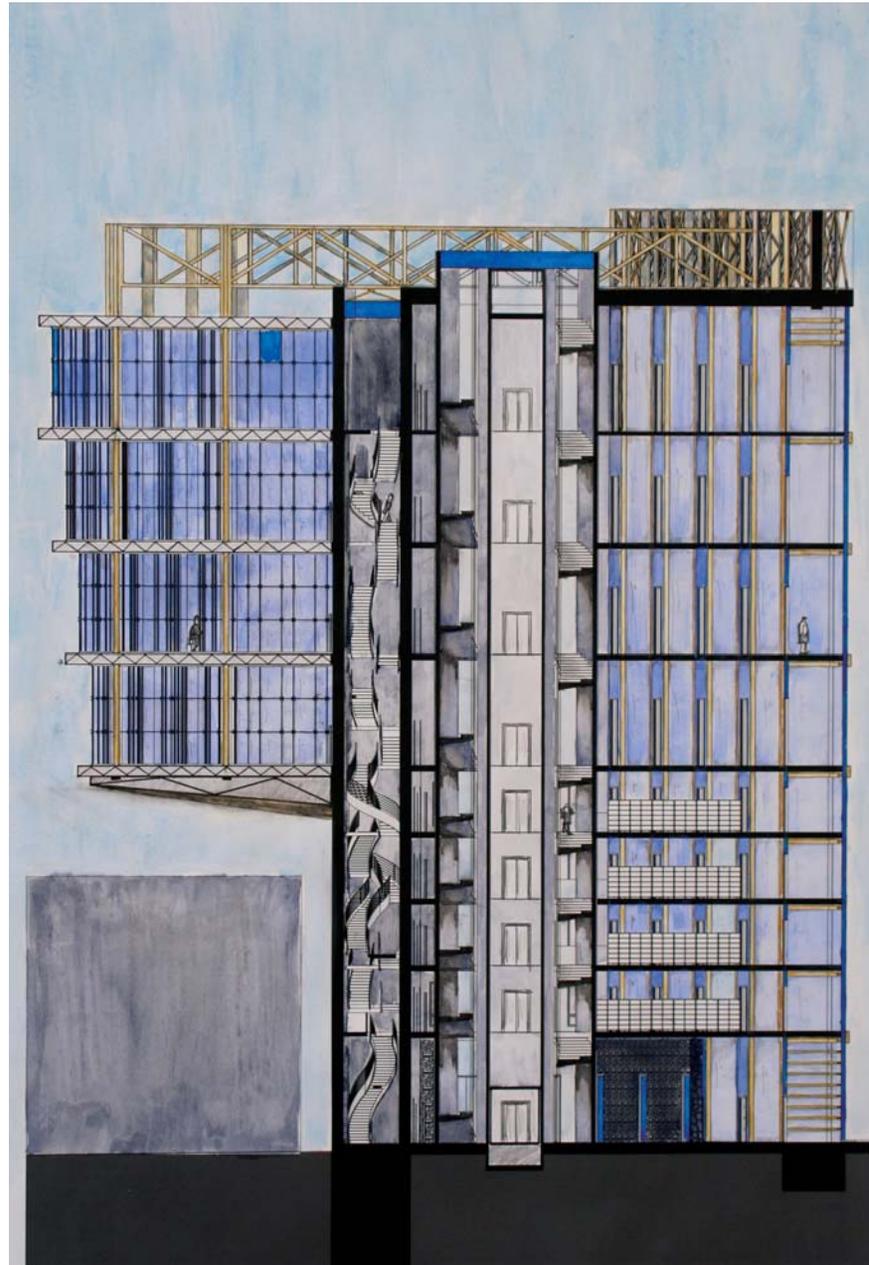


The drawings represented on the following pages are cross-sections of the building. The cross-sections are cut to highlight the vertical circulation options, and render depth to the structure.

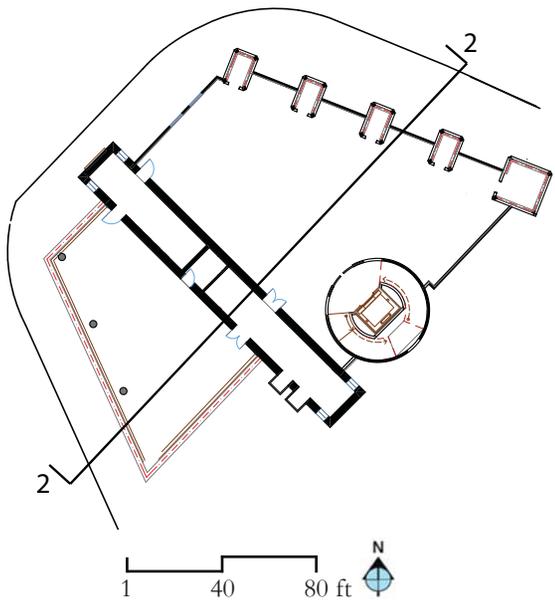


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Section 1

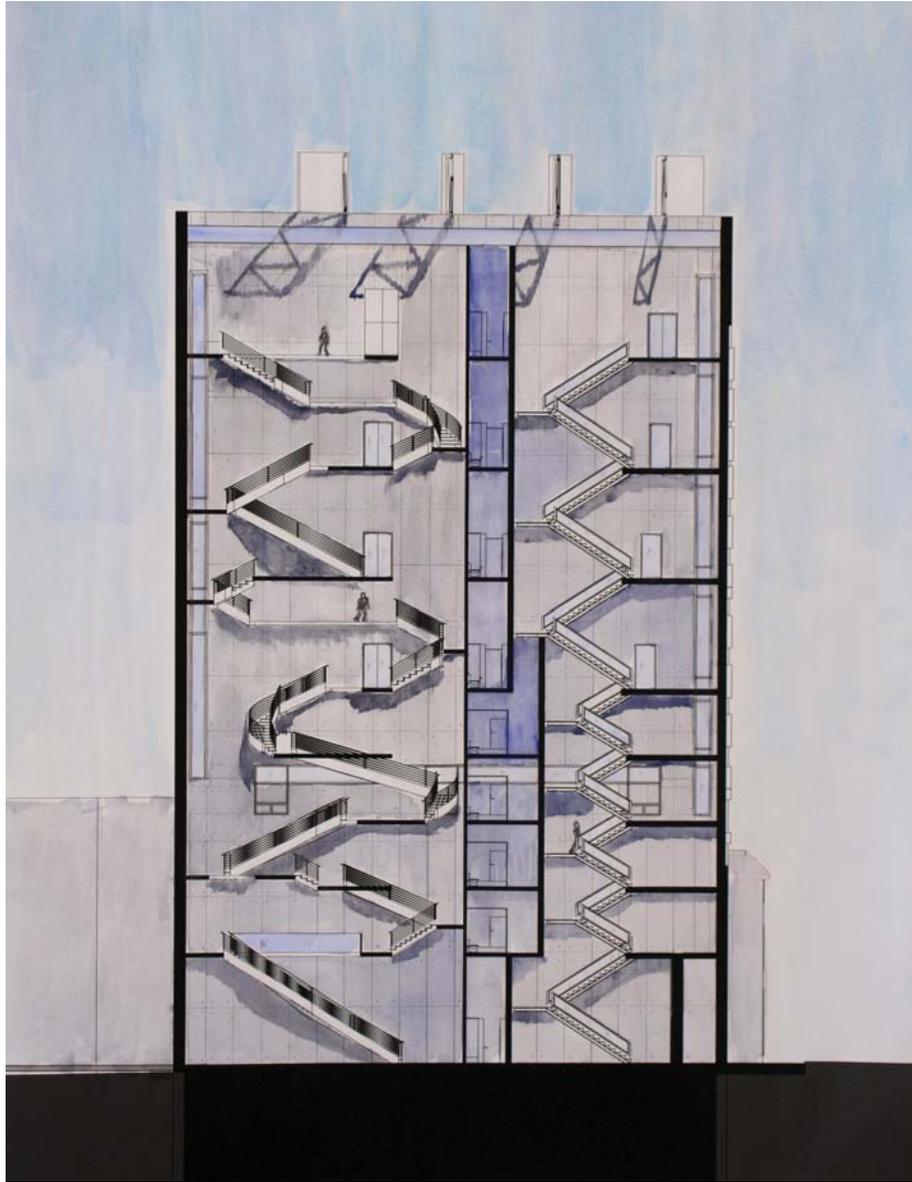


1 15 30 ft

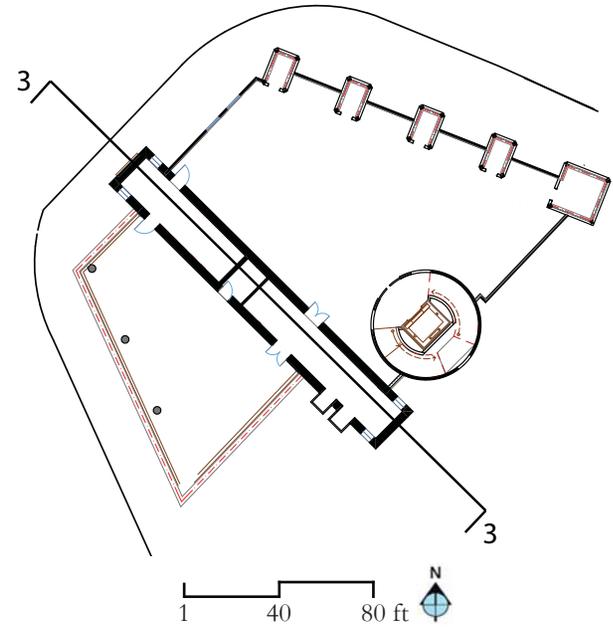


Section 2





1 15 30 ft



Section 3

Considering different material selection and finish treatments, the elevations are rendered to show the multivalent exterior material palette, which signifies various building purposes and rates of change. How each material will weather to create various patinas on the building is also a consideration of material selection.

The primary structural components will change at a slower rate than the exterior, non-structural walls. Even if the Provisions Library does not exist in 50 years, hopefully, the structure will remain, and the building will add to the social memory of the city.



South Elevation

1 15 30 ft



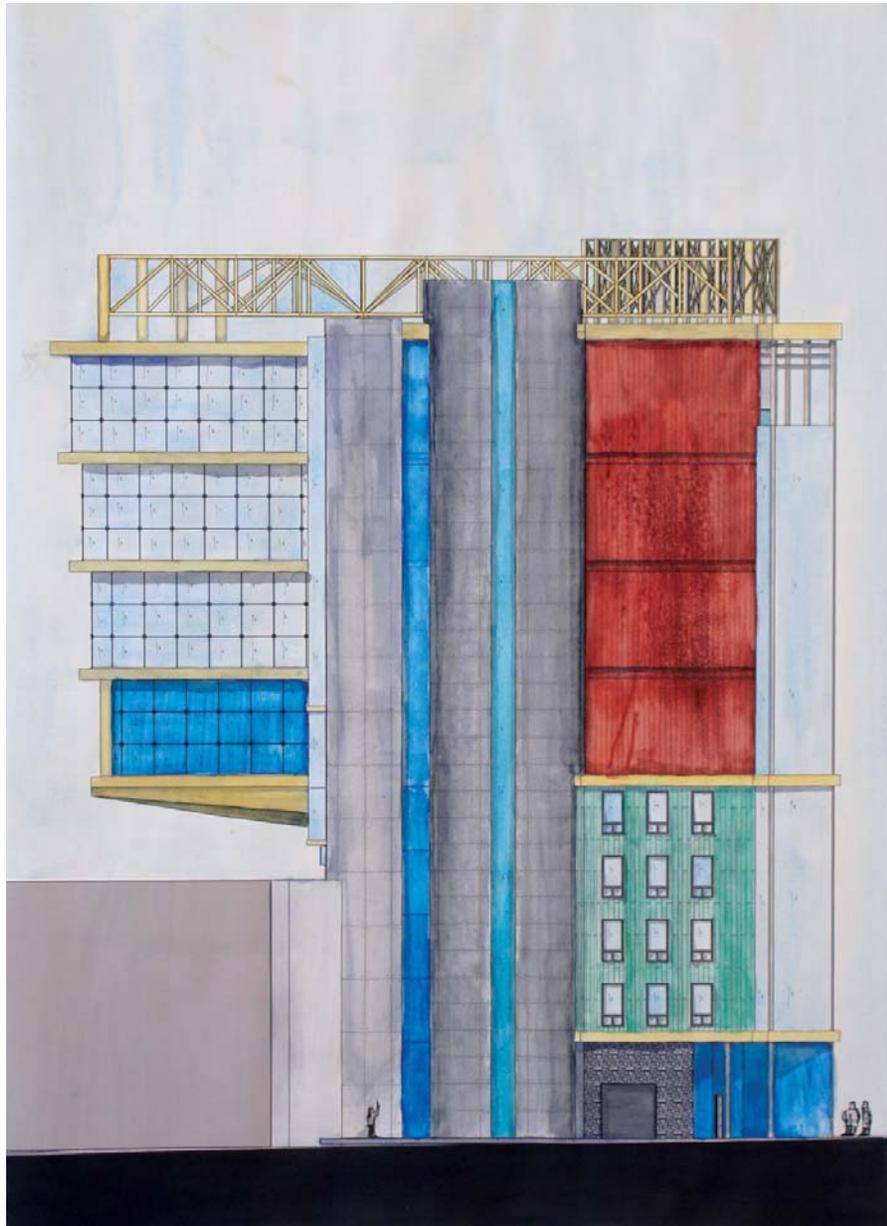
West Elevation

1 15 30 ft



North Elevation

1 15 30 ft



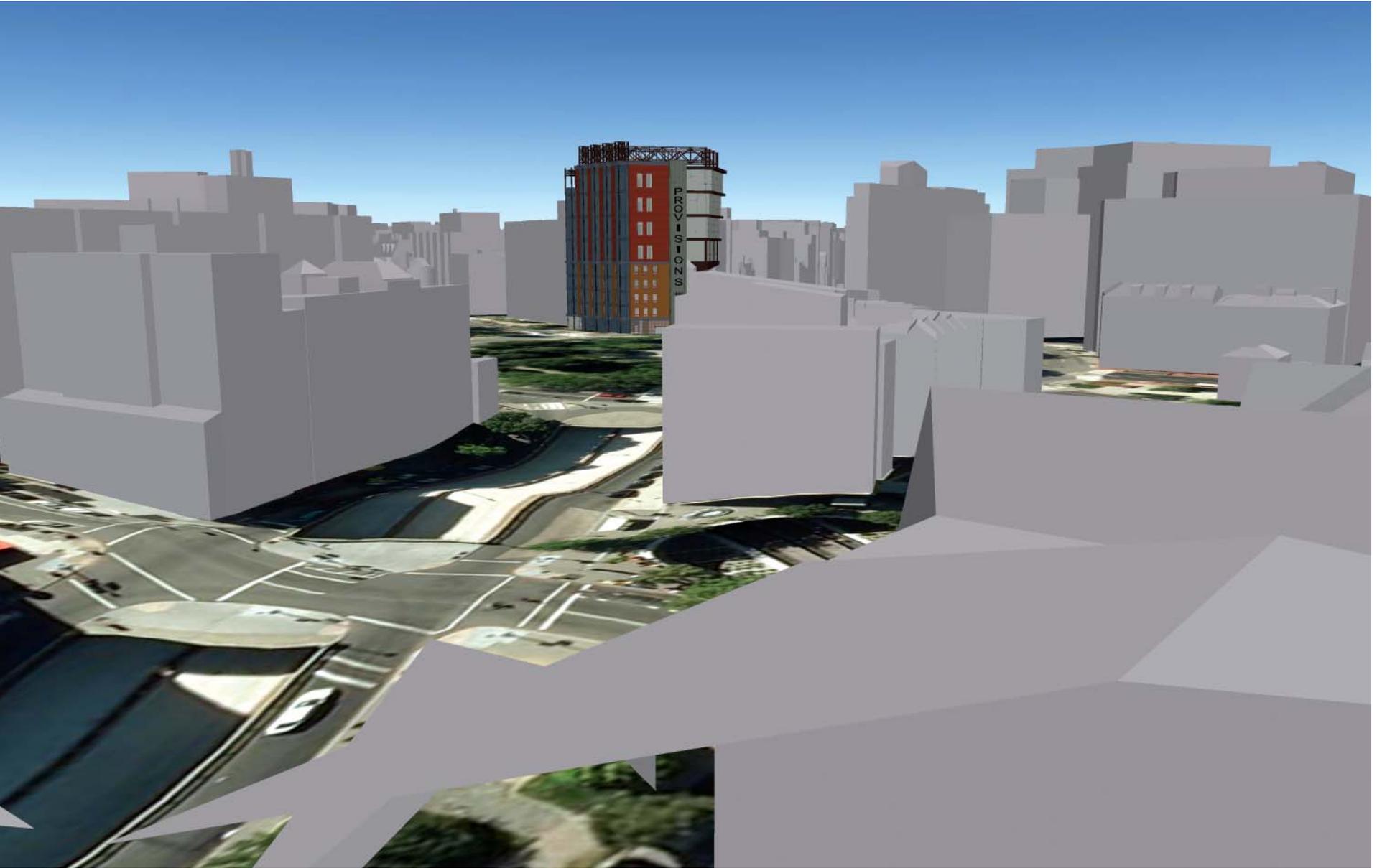
To emphasize the important of the circulation areas, they were designed into the sturdiest form of construction in the building. These foreground forms are intended to demonstrate the significance of the activities enclosed within - in this case walking.

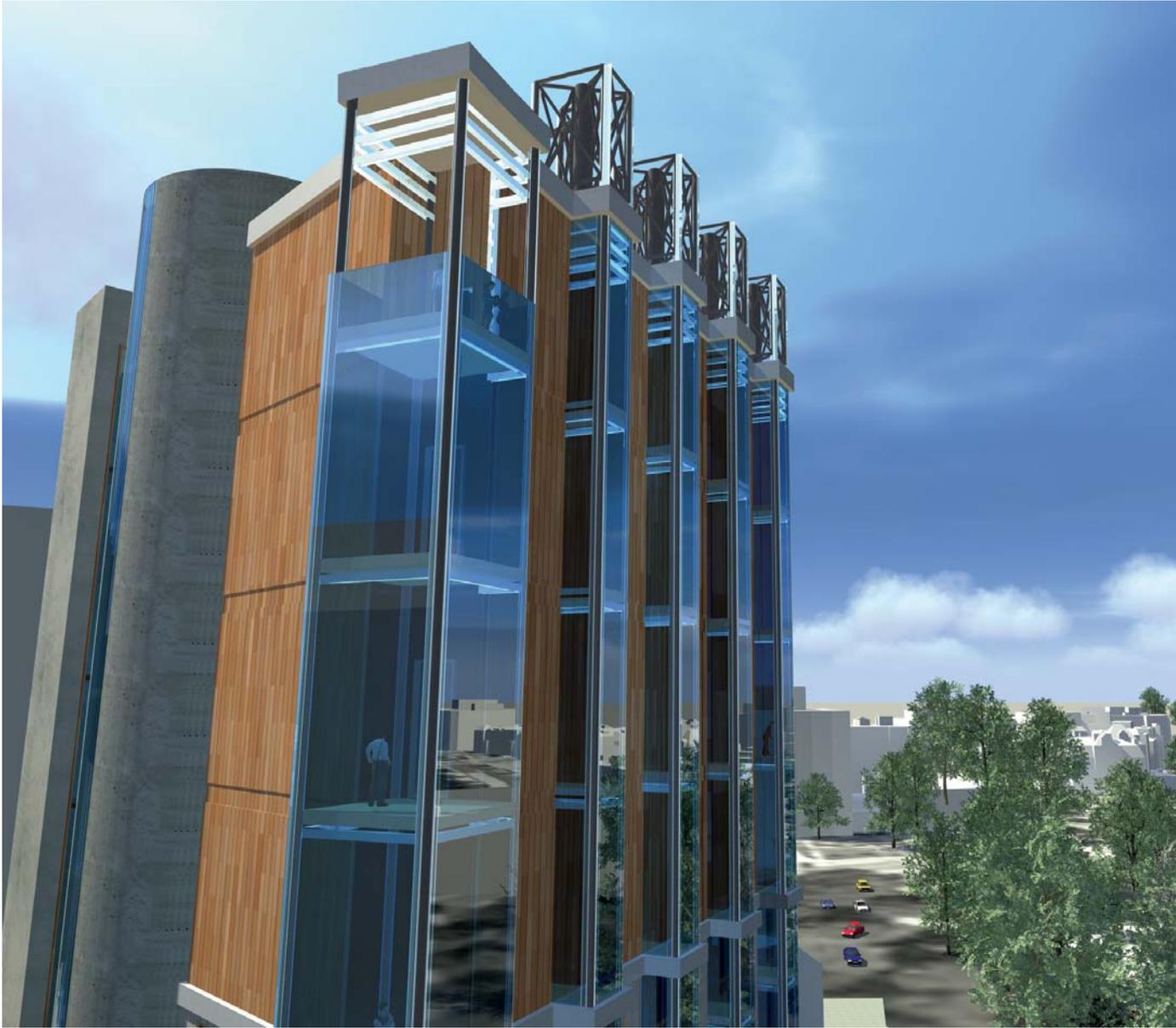
East Elevation

1 15 30 ft



The Provisions Library project viewed from Dupong Circle.
(Daytime final rendering from Dupont Circle)



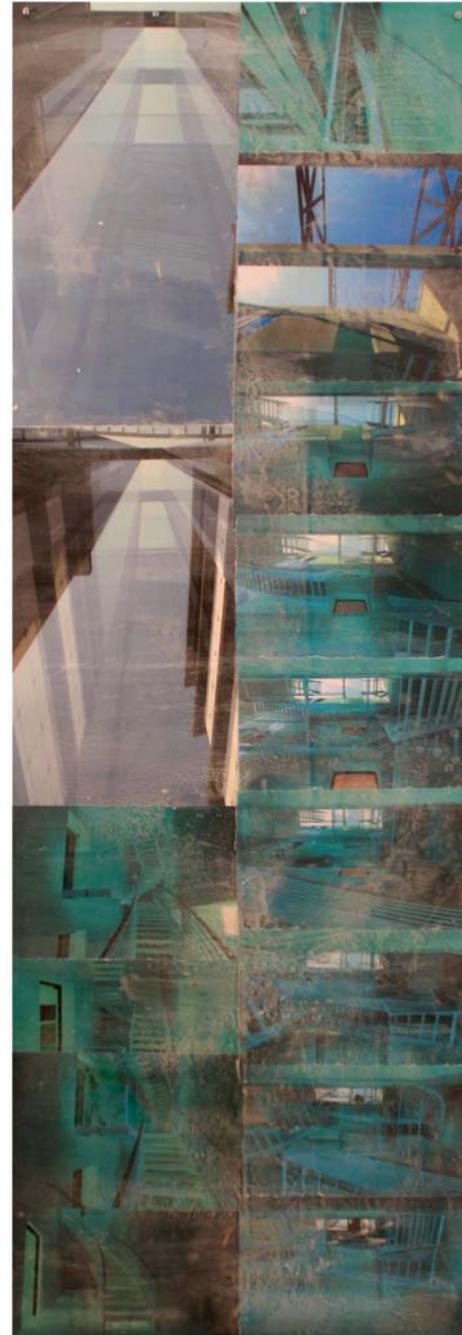


Aerial daytime rendering

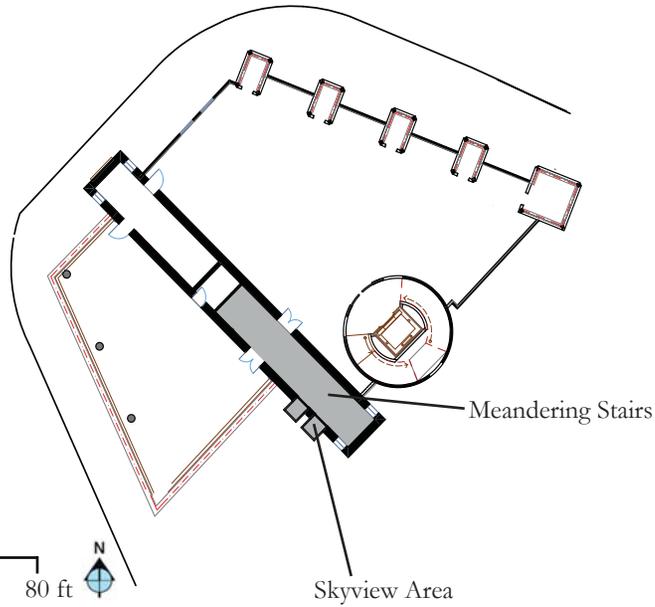
Opposite Page:
Provisions skyline



Skyview Renderings



Meandering Stair
Rendering Collage



The Provisions Library will engage the unique physical context of Dupont Circle on the ground, and provide a significant presence in the Washington, DC skyline.

The meandering stair collage rendering on the right shows rendered views as if an individual were looking to the sky while they traveled the steps. This passage allows an individual to pause at two landings, to view the sky and the city...and wonder.

The following pages contain hand-built models that help gain further insight into the physicality of the proposed structure. The site model is the product of a collaboration between Beth Barret and myself. Her thesis project is also represented in the images of the site model.



Dupont Circle context model view from west



Dupont Circle context model

Opposite page:
Dupont Circle context model
close up





Dupont Circle context model
aerial close up

Opposite page:
Building
overall model view







Opposite page: Model view from Connecticut Avenue

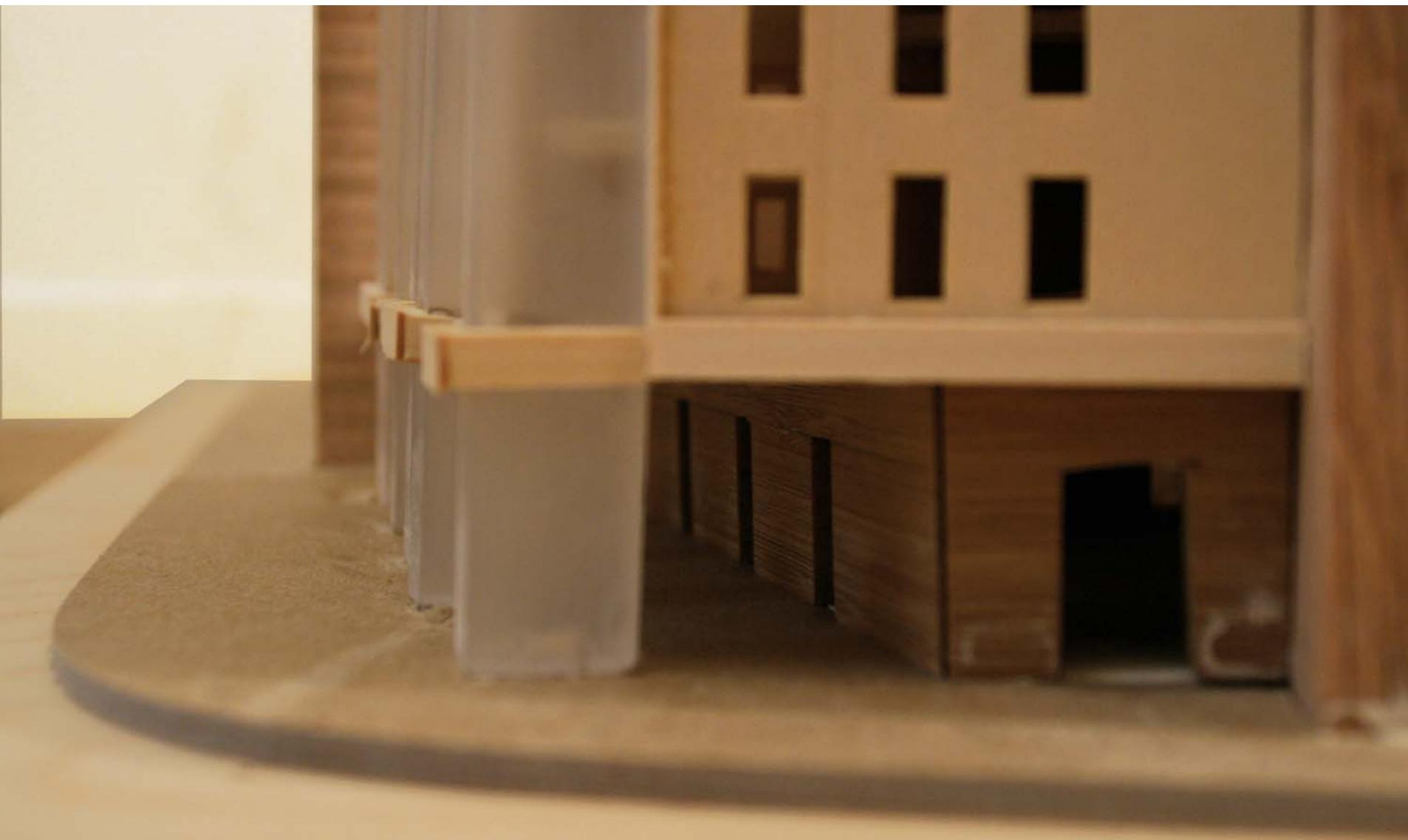
Model closeup of skyline



Model view from Massachusetts Avenue



Model signage closeup



List Of Photographs

All photographs enclosed within this document were created by the author.

- 1) PSFS building, Market St., Philadelphia, Pa - p. 35
- 2) PSFS Building, Market St., Philadelphia, Pa - p. 35
- 3) PSFS Building, Market St., Philadelphia, Pa - p. 36
- 4) The Newseum, Pennsylvania, Ave., Washington, DC - p. 37
- 5) The Newseum, Pennsylvania, Ave., Washington, DC - p. 38

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Brian Sykes
2010