Poetic Expression in Architecture

by
Deborah A. Epstein
A.B. Barnard College, Columbia University
May 1977

Submitted to the Department of Architecture in partial fulfillment of the requirements for the degree of Master of Architecture at the Massachusetts Institute of Technology.

June 1983

© Deborah A. Epstein, 1983

The author hereby grants to M.I.T. permission to reproduce and to distribute copies of this thesis document in whole or in part.

Signature of author:  

Department of Architecture

May, 1983

Certified by:  

Stanford Anderson, Thesis Supervisor
Professor of History and Architecture

Accepted by:  

Jan Wampler, Chairman
Departmental Committee for Graduate Students

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

MAY 26 1983
DISCLAIMER OF QUALITY

Due to the condition of the original material, there are unavoidable flaws in this reproduction. We have made every effort possible to provide you with the best copy available. If you are dissatisfied with this product and find it unusable, please contact Document Services as soon as possible.

Thank you.

The images contained in this document are of the best quality available.
Poetic Expression in Architecture

by
Deborah A. Epstein

Submitted to the Department of Architecture on 13 May 1983 in partial fulfillment of the requirements for the degree of Master of Architecture.

Abstract

A common element of twentieth century thought has been the analysis of each phenomenon to its internal logic, the reduction of everything to bare essentials. What has evolved is a notion, to some extent shared by all of us, that in a world which seems almost incomprehensible we can regain meaning by stripping away the superfluous and revealing the essential. What has been pushed aside in this mind-cleaning frenzy is that other side of human nature, the speculative, imaginative side, a side no less important than the definitive and rational one. My purpose in this thesis is to use poetry—that is, poetic verse—as a model for re-learning the expression of architectural ideas in ways that will encourage people to speculate and to form imaginative connections. The study is in two parts: an essay and a design of a library for Barnard College.

Thesis Supervisor: Stanford Anderson
Title: Professor of History and Architecture.
Acknowledgements

I feel great debt to
  Stan Anderson
  Gerald Allen
  Alan Joslin
  Patty Seitz
  Hazem Sayed
  George
  and to my parents
for their gracious and generous contributions to this work.

This thesis is dedicated to Frieda Epstein and
Henrietta Allen.
Table of Contents

Part One: an essay ........ 9
Part Two: a design ........ 49
Drawings .................. 69
Sketches .................... 85
List of Illustrations ........ 99
Bibliography ............... 103
Part One: an essay

A common element of twentieth-century thought has been the analysis of each phenomenon to its internal logic, the reduction of everything to bare essentials. The origins of this tendency can be traced to earlier times. They can, for instance, be linked to the Industrial Revolution in the eighteenth century, to the explosion of technological inventiveness in the nineteenth century, to artists' fascination with machines in the early twentieth century, and to the complementary search at the same time for a rigorous, reduced understanding of logic and science which, it was hoped, might provide the basis for a modern philosophy.

What has evolved is a notion, to some extent shared by all of us, that in a world which seems almost incomprehensible we can regain
meaning by stripping away the superfluous and revealing the essential. What has been pushed aside in this mind-cleaning frenzy is that other side of human nature, the speculative, imaginative side, a side no less important than the definitive and rational one. By forgetting that the one nurtures the other, we have upset the balance between the two, and this situation is reflected in almost every corner of our experience, including architecture. So accomplished have we become at expressing bare essentials that much of what we have built neither invites nor rewards speculation.  

My purpose in this thesis is to use poetry— that is, poetic verse— as a model for relearning the expression of architectural ideas in ways that will encourage people to speculate and to form imaginative connections.

Poetic expression, whether poetic verse or poetry in general, is in contrast to scientific expression. One difference between the two is the relationship between the expression and the expressive medium. Whereas in scientific expression the medium is intended to be transparent, with the focus on content, in poetic expression the medium is tangible; there is also a concordance between content and mode of expression.

In science the intention is to elicit a single, ineluctable perception, but in poetry the intention is to encourage multiple perceptions. The poet interweaves many themes in his work, and part of the richness of poetry comes from the unconsciously ambiguous result. The magic

1 This introduction borrows freely from William Hubbard’s as yet unpublished essay, “New Lamps.”

gradient is metaphor, which Aristotle tells us is the greatest thing by far of which to have command. It "cannot be imparted by another; it is the mark of genius, for to make good metaphors implies an eye for resemblances."\(^3\)

Making metaphor is not just the familiar act of consciously calling one thing another. It is also what Ernst Cassirer has defined as the "genuine radical metaphor," the "transmutation of a certain cognitive or emotional experience into . . . a medium foreign to the experience."\(^4\) The medium can be a word, a form, a sound, a movement, and it is accessible to anyone without specific learning. Each expression in poetry is the distillation, the compression of many experiences into such a medium. When we encounter it, any or all of the experiences contained within it return to us.\(^5\) Poetry of any sort depends on this cognitive process.

Poetry is used as a model in this study, but any artistic medium could have served this purpose. I chose to look at poetry because its forms, words, and sounds are things with which most of us are familiar. In addition, poetry, unlike architecture, has never been relegated to the role of a service profession. It has always been seen as something designed to encourage people to speculate and to form imaginative connections. Thus I have used poetry as a model in the hope of identifying and producing similar qualities in buildings.

The issue of intention must be addressed. My analysis of both poems and buildings emphasizes the works almost to the exclusion of the artists'
intentions, though it attempts to draw from the context of the poems and the buildings. While I believe that an author's intention, unless it is evident in the work, is not of necessary interest to the audience, I make a distinction between an author's intention and the cultural, artistic, and historical context of a work, which is of importance.

The boundary between intention and context is nevertheless difficult to define precisely. For example, the meaning of a particular word changes over time; thus it is acceptable to ascertain the literal meaning of such a word in a poem. Beyond this, the connotations of the word will at some level express both the unconscious and conscious cultural intentions of the artist. And the artist's personal intentions are not far behind.

For instance, in studying Milton's *Paradise Lost*, one could understand a great deal about the poem without any knowledge of the story of Adam and Eve. But with it, one's appreciation becomes greater. Furthermore, if one knows that the poem was written during the Stuart Restoration, the poem has more depth. Knowing that Milton was a Puritan adds even more. It is difficult to say just when this knowledge leaves off being historical context and starts to reflect the artists' personal intentions.
My purpose in this section is to use a particular poem as a catalyst for thinking about a specific piece of architecture. The works are a sonnet by William Wordsworth, "Inside of Kings College Chapel, Cambridge," written in 1820, and the library of Philips Exeter Academy, Exeter, New Hampshire, by Louis I. Kahn, built in 1974. The sonnet is of special interest because it is only partially successful; thus it is able to strengthen our understanding through both its strengths and weaknesses. The library is of special interest because it is an unornamented contemporary build-
ing; thus it shows us that the poetry of a building does not rely only on its ornamentation.

Inside of Kings College Chapel, Cambridge

Tax not the royal Saint with vain expense,  
With ill-matched aims the Architect who  
planned--
Albeit labouring for a scanty band  
Of white-robed Scholars only--this immense  
And glorious Work of fine intelligence!  
Give all thou canst; high Heaven rejects the  
lore  
Of nicely-calculated less or more;  
So deemed the man who fashioned for the sense  
These lofty pillars, spread that branching  
roof  
Self-poised, and scooped into ten thousand  
cells,  
Where light and shade repose, where music  
dwells  
Lingering--and wandering on as loth to die;  
Like thoughts whose very sweetness yieldeth  
proof  
That they were born for immortality.

One of the qualities of poetry is the tangibility of the medium. The artist makes the audience aware of the tactile qualities of words, and the sounds are to some extent an end in themselves. There is also a concordance between the medium and the denotative meanings, the images, and the feelings evoked. Look for a moment at the line in the sonnet,

Where light and shade repose, where music  
dwells  
Lingering--and wandering on . . .

If we focus on the word "Lingering" we can see such a concordance. Its placement at the beginning of a line causes us to linger before getting to it. The change in rhythm from iambic to trochaic
("LING-ering") separates it further. We must re-arrange the tongue from the "s" of "dwells" to the "l" of "lingering," again causing distance. And the word itself lingers--it has its own built-in echo when pronounced "LING-ring." It is further echoed in "wandering."

Poems are unparaphrasable. What happens when the words are changed is that the metaphorical abstraction of the desired set of experiences is altered. The word "sense" in

So deemed the man who fashioned for the sense is a clear example of Cassirer's genuine radical metaphor. The word "sense" is an abstraction of many experiences. When we read "who fashioned for the sense" we think simultaneously of the "sense" of a thing being the logic of that thing, and of the senses. We are caused to redefine "sense." Does "sense" relate to logic, as the empiricists would have it? Or does it refer to our senses (the same senses, actually) which emote--the romantic sense of "sense"? We are encouraged to speculate; we call forth all of our associations with the word "sense." But if Wordsworth had said, "fashioned for the senses," or "fashioned for the mind," he would (in addition to destroying his rhythm or rhyme) have lost our curiosity.

Similarly, let us for a minute substitute "carved" for "scooped" in "and scooped into ten thousand cells." When it becomes "and carved into ten thousand cells," the line gets heavy. Wordsworth is, of course, talking about carving stone, but he is also talking about the dematerialization of
materials. "Scooped" is like magic; it tells us of the lightness of the ceiling, of the ease of the carving--one scoops with one's hand, casually, not with a chisel. Also affected by substituting "carved" is the sibilant sound of the whole passage:

So deemed the man who fashioned for the sense
These lofty pillars, spread that branching
roof
Self-poised, and scooped into ten thousand
cells,
Where light and shade repose, where music
dwells

This evokes whispering, just as the absence of sibilants in the next line suggests dead silence:

Lingering--and wandering on as loth to die.

In the poem the perception of the work is a partial reenactment of the work's creation. Note the simultaneity expressed in the grammatical construction of "So deemed the man who," followed by a series of predicates: "fashioned for the sense . . .," "spread that branching roof . . .," and "scooped into ten thousand cells . . . ." Similar simultaneity is implied in the construction of "ten thousand cells," followed by "Where light and shade repose," and "where music dwells," in which light, shade, and music are sensed by us at the same time. In opposition to all of these immediate, simultaneous occurrences is, again, the phrase, "where music dwells/Lingering--and wandering on as loth to die," which becomes drawn out and sequential, with its hyphenated predicate: it hangs in the air like organ music in the chapel.
At its most obvious level, the sense of this passage is that the roof is a Gothic fan vault, and that the walls and ceiling have both been dematerialized. "Self-poised" describes the seeming weightlessness, the notion that perhaps the roof is hanging from heaven exempt from gravity. Another reading is that the two parts of the arch are physically leaning on one another at the center. The words "self-poised" stand apart from the iambic pentameter of the sonnet by demanding a slight accent on both "self" and "poised." The "f" which ends "roof" and "self"
and the "d" which ends "poised" stop us three times and float "self-poised" between the two flowing phrases, "spread that branching roof" and "and scooped into ten thousand cells" much as the ceiling floats above, connected, yet unconnected, to the walls.

The passage is so broken up by pauses and a series of sounds which are difficult to pronounce that the two and a half lines are said quite slowly, causing a feeling of calm, of ease, of unhurriedness, all of which we associate with being in churches.

The Library of Philips Exeter Academy by Louis I. Kahn expresses an analogous economy of means. There is a coherence to this building; each move has been made to entwine themes of structure, material properties, programmatic needs, experiential qualities, suggested relations to context, bringing seemingly unrelated ideas into a graceful concordance. The expression of the central hall, the stacks, and the carrels as three concentric rings is a straightforward decision which accounts for much of the building's richness. For example, the three rings have different qualities of light.

Exter, plan.
Exeter, section.
The great hall is lit from above, which reinforces the hall as the heart of the building; the stacks receive no direct light in order to protect the books; the carrels are lit from the side through windows which the students control and through which they have a connection with the exterior. Also, the sound quality in each of the three places is different. In the great hall voices echo; in the stacks sounds are muffled by the carpeting and the books; in the carrels conversations sound small because of the carpet and the height of the space. The diagram of the building is expressed, too, in the sections of the spaces, the hall being very high, the stacks being very low, and the carrels being double height, creating a spacious feeling neither institutional nor residential. The materials of the three places are different, and the structures are separate. The hall is made of great concrete piers and walls, the stack is supported on concrete columns, and the carrel is made of brick walls. Wood and carpet are the secondary materials, found in all areas. Even the public and private zones of the building are defined by these three rings. For example, the brick
zone, first encountered as the arcade on the ground floor, is the most public part of the building.
Above, it defines the carrels, the most private part of the building.

With a few careful decisions, Kahn has made an environment with nearly infinite associations.
For example, his expression of the properties of materials is used also to orient us in the building. The pattern of the openings in the brick, which get bigger as they go up, is descriptive of Exeter, elevation.
the diminishing structural loads from the bottom to the top of the building. "The weight of the brick makes it dance like a fairy above and groan below. Arcades crouch," Kahn said. The piers of the arcade are fatter in proportion than we expect; they appear to be heavy. By the time we are on the roof, the openings are huge and flying above our heads; they are much lighter.

The properties of poured-in-place concrete, too, are exploited. First, the finish refers to classical architecture. As we enter, the concrete of the main stair to the great hall has been poured into board forms which give it the rusticated look we associate with the base of a classical building. The smooth concrete of the great hall refers to the more refined finishes appropriate to a piano
nobile. The circle cut-outs are expressive of the structural properties of poured concrete; because reinforcing bars can distribute the load to any part of the wall, circular openings are possible.

These have additional purposes. For one, they allow the person in the stack to know where in the vertical organization of the building he is. The circles also refer to the pure geometries of the rest of the building, as well as the philosophies
from which pure geometries come, both Platonic and Modern. In both the poem and the building the metaphorical quality of language and form enable the reader to reconstruct such a wealth of meanings, many of them seemingly unrelated.

Poetry expresses and elicits emotion, and Kahn's intention for the procession from the arcade through the lower level and up the stairs into the great hall was to make people feel pensive and studious. Light trickles down from sixty feet above and washes the concrete and us, very small, at the bottom. The height of the space elicits awe and allows access, physical and spiritual, to the library.

Poetry causes a reinterpretation of references. Kahn's library refers both to the Modern Movement and to the Beaux-Arts tradition. The division into three sections which express program elements refers to the functionalist position of the Modern Movement; at the same time the four extruded square volumes in the corners are reminiscent of the Beaux-Arts tradition of servant and served spaces.

The overall shape of the building is cubic, a Platonic solid which reminds us both of the forms favored by Modernism and of the perfection associated with such forms. Emphasizing the purity of the library's form is the dining hall next door, designed by Kahn at the same time, which has a more house-like form, eliciting the comparison between knowledge (the sacred) and eating (the profane). The box is not quite tall enough to be a cube, though, and the experience of seeing the sky
through the top row of openings reminds us of ruins. Perhaps the cube was once complete; perhaps there was a time when one couldn't see sky through these windows. Kahn, like many of us, was fascinated by ruins; they are a rich source of speculation.

Still another reading of the shape of the building is as a reinterpretation of the brick-box buildings found throughout New England. All of these associations cause the observer to rethink...
his relationship to, and his understanding of, each of them. Again, it is metaphor which enables us to understand these connections and to make our own.

The coherence of the whole played against the specificity of the parts is important in art. When we look back at the Wordsworth sonnet, we note that, in this sense, it is unsuccessful. While it holds together by virtue of its strict meter and rhyme scheme, it separates into pieces which relate not very well either to each other or to the whole. The poem first describes the role of the client and the charge of the architect, then describes the experience of being in the chapel and concludes with a non-sequitur about the immortality of these experiences.

Look at the first quatrain:

Tax not the royal Saint with vain expense,
Will ill-matched aims the Architect who planned—
Albeit labouring for a scanty band
Of white-robed Scholars only . . .
These lines seem to talk about the complexity of the architect-client relationship, though Wordsworth is setting up his point that neither thought nor money should be spared, which is finally where he arrives:

    Give all thou canst; high Heaven rejects the lore
    Of nicely-calculated less or more . . .

but he takes so long in getting there! The richness of what follows is not at all proportionate to the work that one must do to untangle these first lines, as no significant insight either into the sense of the event or into the music of the language results. The speculation turns out to be a dry hole. Was not the donor, the "royal Saint" for the chapel, Henry VII? Because Henry VII was not a saint the image is misleading; speculation is not gratified, but frustrated.

The last two lines of the sonnet,

    Like thoughts whose very sweetness yieldeth proof
    That they were born for immortality.

are also a disappointment. They bring in a new image, jolt us from our speculations on the previous six lines to try to decipher what he is talking about. The poem is not primarily about the immortality of the chapel, but of the experience of being in the chapel. The lines refer to the image of lingering music, only one image in a preceding passage. Again our speculation is unrewarded, frustrated.
On the other hand, the Exeter Library is successful in playing the specificity of its parts against the coherence of the whole. If we look at one part of the building, the brick zone of the carrels, we see that the carrel and building exist both dependently and independently. The brick of the narrow, high carrel zone makes the area feel warm and gives it a visually soft texture. The carrels' location at the edge of the building allows personal control of light and view. Sitting in a carrel one feels as though one is in a room rather than at a long row of desks because of Kahn's expression of the brick as enclosing walls rather than as columns. As we have noted above, the brick skin relates the building to the brick boxes found throughout New England. Also, the outer layer of carrels holds the stacks away from direct light. Thus the carrel is a place very specific to itself, with the desirable attributes of a private study, yet it is at the same time a contributing part of a coherent whole.
Metaphor helps explain how poetry is perceived. To realize that poetic expression is facilitated by metaphor, though, does not turn us into poets. Aristotle has told us that making metaphors is the part of poetry that cannot be taught. The qualities described above assist us in dissecting poetry, but how do we create it? How are these qualities, common to poems and architecture, elicited?

In each case, we start by trying to see and express resemblances consciously to make comparisons. This starts our minds speculating. What enables transmission from artist to observer is the artificial quality, the coherence of the object itself on which speculation is focused. A work of art must exhibit a coherent order, something to which deviations can refer. This quality of coherence is the artificial quality of both poetry and architecture. By having it, a work of art offers something understandable, something tangible, and yet something open-ended. The observer is drawn in to complete the work, but the actual object remains incomplete and seductive.

The aspect complementary to the artificial quality is the sequential quality. The sequential quality of architecture, and the sequential quality of verse are similar in that though each can be described in a linear fashion--one reads poetry from beginning to end, or one can walk through the procession of a building--the perception of each is not strictly linear. In the poem, our minds rush
off from the main way with each sound encouraging us to ponder its meaning, its contribution, its significance. In a building, we are physically as well as emotionally drawn in many directions, and there is always another side trip, another bay window, another place to explore. The sequence, which is by nature linear, is an armature for speculation which is by nature non-linear.

The two qualities, artificial and sequential, are interdependent; the events of the sequence are understandable as parts of the whole as vividly as they are understandable as individual experiences.

One way to study a poem or a building is through its sequence. In a poem, we follow the sounds and rhythm in relation to its sense, images and expression of feeling. Devices such as expressing nervousness or excitement with a phrase whose sounds are fluid and therefore read quickly, or placing emphasis with a pause or a change in rhythm are translatable into architecture; moving from a low space to a high space causes a pause as does a square or circular space and the rhythm of an arcade often changes to signal entrance. From understanding how a poem takes us through its sequence we can look more attentively at architecture to see how a building transports us. Light, for instance, often draws us through.

A passage from Milton's Paradise Lost illustrates the sequential and artificial qualities of a poem. McKim, Mead, and White's Boston Public Library
illustrates the analogous properties in architecture.

from Book IX, lines 863-885

This tree is not as we are told, a Tree
Of danger tasted, nor to evil unknown
Op'ning the way, but of Divine effect
To open Eyes, and make them Gods who taste;
And hath been tasted such: the Serpent wise,
Or not restrain'd as wee, or not obeying,
Hath eat'n of the fruit, and is become,
Not dead, as we are threat'n'd, but thenceforth
Endu'd with human voice and human sense,
Reasoning to admiration, and with mee
Persuasively hath so prevail'd, that I
Have also tasted, and have also found
Th' effects to correspond, opener mine Eyes,
Dim erst, dilated Spirits, ampler Heart,
And growing up to Godhead, which for thee
Chiefly I sought, without thee can despise.
For bliss, as thou hast part, to me is bliss,
Tedious, unshar'd with thee, and odious soon.
Thou therefore also taste, that equal Lot
May join us, equal Joy, as equal Love;
Lest thou not tasting, different degree
Disjoin us, and I then too late renounce
Deity for thee, when Fate will not permit.

The ease with which combination of sounds can be pronounced and the concordance with or divergence from the blank verse effect the speed of progression through this passage; deviations bring the reader's attention to certain words and phrases. As we move through, meanings of words change, arguments unfold, emotions shift. We are made to notice what Eve wants Adam to notice, glossing over points not yet defensible.

The opening of the passage sounds articulate and convincing, because the abundance of plosives and sibilants forces us to speak slowly:

This / Tree is / not / as / we are told
The negative is emphasized.

We then gloss over

... a Tree
Of danger tasted, nor to evil unknown
Op'ning the way ... 

as it would not be supportive of Eve's goal of convincing Adam to eat from the tree if she reminded him just yet of the promised consequences.

Though the sounds of this phrase are easy to pro-
nounce, "evil unknown / Op'ning the way" has a foreign rhythm. In "E-vil un-KNOWN," an anapest replaces an iamb; in "OP-ning the WAY," a trochee is substituted. The two changes jolt the reader into noticing the importance of the words; they flag one of the themes of the passage: is knowledge evil or dangerous?

We then fly through the next line and land with terrific emphasis on "Gods who taste," a phrase which, because of the complete shift of the mouth's position between "Gods" and "who," must be said slowly. Tasting knowledge to become like Gods is one of the keys to Eve's argument; she tasted because by eating from the tree the serpent became like God, an achievement that Eve coveted. It is also a major theme in the story of Paradise Lost; aspiring to be Gods was what sent Adam and Eve from the garden.

The passage is broken into smaller pieces to make it easier to hear and to understand. In this five line introduction the word "Gods" is the strongest. The lines build to it with a running start,

        but of divine effect / To open eyes, and
        make them . . .

and then follow with a denouement consisting of a short phrase, "who taste," and a longer one "and hath been tasted such." The longer phrase both closes the first part of the argument patly and opens the second part fluidly.

In the next phrase,
... the Serpent wise,
Or not restrain'd as wee, or not obeying,

the pause caused by the "t" next to the "w" in "the Serpent wise" calls attention to the one quality and, in contrast, the effortlessness of the remaining words brushes aside the others.

Hath eat'n of the fruit and is become . . .

slips past Adam and places considerable emphasis on "Not dead," two accented syllables which stop and challenge God's threat: because the serpent is not dead Eve has proof that the tree is not "Of danger tasted."

The third and last high note before the culmination of the argument follows the excited phrase,

... but thenceforth
Endu'd with human voice and human sense,

when we land on "REA-soning," which is dactyl, the meter most different from the iamb. Reasoning is what makes man like God rather than like beasts; the serpent's "Reasoning to admiration" finally tempted Eve to eat from the tree.

The three little climaxes are the high points of the argument: Eve promises that eating from the Tree of Knowledge will make Adam like a God; she begins her proof by pointing out that the serpent ate and is "Not dead;" to the contrary, he can reason.

In the next part,
. . . and with mee
Persuasively hath so prevail'd, that I
Have also tasted, and have also found
Th' effects to correspond, opener mine Eyes,
Dim erst, dilated Spirits, ampler Heart,
And growing up to Godhead . . .

Eve describes her experience. What she did flows
easily; how she felt merits a tortured rhythm.
There are a series of swollen words in "opener
mine Eyes," "dilated Spirits," and "ampler Heart,"
all of which are expressive of "growing up to
Godhead," the most excited words in the passage.
Its easy sounds tumble out after we have waded
through the three phrases which precede it.  "Dim erst," nestled among the swollen phrases,
is two accented syllables which are abruptly short.
Next to the staccato of "dim erst," "opener,"
"dilated," and "ampler" sound even more generous.
These lines slow us down for the temptation.

The phrase,

. . . which for thee
Chiefly I sought, without thee can
despise . . .

is the introduction to the temptation. "Which"
stops us cold by demanding concentration to
enunciate, especially next to "growing up to
Godhead." It is a technical term compared to
the emotional "dilated Spirits" and "ampler
Heart." Immediately following, the word "Chief-
ly" demands attention. Rather than saying "I
chiefly sought," which would stay in the iambic
meter, "chiefly" is placed at the beginning
where it becomes a trochee.
This phrase slows us, but nothing we have encountered is as difficult as the next lines. The sibilant passage must be said slowly and pointedly.

For bliss, as thou hast part, to me is bliss, Tedious, unshar'd with thee, and odious soon.

The sibilants, especially back to back as in "odious soon," form the lips in faint smile. This line and those following are overrun with "e" which also causes one to smile when enunciating, as we might imagine Eve smiling at this point.

The temptation continues,

Thou therefore also taste, that equal Lot May join us, equal Joy, as equal Love; Lest thou not tasting, different degree Disjoin us, . . .

with a passage which sounds harsh because of its abundance of plosives. Also, via sound, "equal Lot" is associated with "equal Love," as "join" is associated with "Joy" in a line completely empty of plosives which sits between two lines full of them. Obviously, Eve and the rest of us would like Adam to do what sounds most melodious.

The choppiness of sounds in

Lest thou not tasting, different degree Disjoin us, . . .

expresses the frightening possibility that Adam could be separated from Eve. The separation
between "Lest" and "thou," the time it takes us to rearrange the tongue from "Lest," behind the teeth, to "thou," between the teeth, is the time in which we realize that Adam has no choice.

When Eve talks of herself,

... and I then too late renounce
Deity for thee, when Fate will not permit.

she uses softer sounds, except for "Deity" and "Fate" which are the troublesome powers. "DE-ity," a dactyl, sounds severe because of its two plosives; you practically spit the word--"Deity."

The passage slows from "growing up to Godhead" to the end, expressive of the slowness of speech that comes with seriousness. The last phrase is broken into three parts, three iambics, all ending in "t,"

when Fate / will not / permit

which give emphasis through the three strong stresses. There are three ends to this sentence; it is a very final phrase.

The coherence of the passage comes partly from the form; we have noted that the meter is a constant against which we perceive deviations. The overall rise and fall of intensity, the introduction, complication, and denouement, make these lines coherent on their own and yet a part of the rest of the poem. Within the overall form are a number of smaller divisions,
here, the segments of the argument, and within those is an even finer system, the emphasis on words, on syllables, and on sounds. The consistency among levels contributes to the understandability as we move through the sequence.

The recurrence of certain words helps to tie the passage together, though it sends our minds simultaneously in many directions. In this passage, "taste" occurs six times. Additionally, earlier in Book IX the last line of the serpent's temptation of Eve is "Goddess humane, reach then, and freely taste."

Here, Eve describes her God-given understanding of the Tree of Knowledge as "a Tree / Of danger tasted," which she then contrasts with her new understanding of the tree; it can "make them Gods who taste." She boasts proof in "And hath been tasted such." The serpent, by contrast, did not taste of the tree, but "Hath eat'n of the fruit." Cautiously following the serpent's example, Eve says "I / Have also tasted." Now she wants Adam to "also taste," because "Lest thou not tasting . . ." a whole series of terrible things will happen. "Taste" is thus associated with the Tree, God, the Serpent, Eve, and Adam.

But it has no single meaning; at one time it is related to poison, at another it is the symbol of love—if Adam refuses to taste he certainly does not love Eve. Elsewhere, it is the way of scientifically testing something: the serpent's tasting proved to Eve that doing so made him like a God; so she, too, tasted and now can
prove to Adam that the Tree is potent. Even not tasting has become an action, a hostile one with consequences. By presenting a wide range of associations to a single word that recurs, Milton opens the doors to speculation about its meaning; we reinterpret and redefine.

Much of the same occurs in architecture as we can see in McKim, Mead, and White’s Boston Public Library. The procession from Copley Square to the reading room of the library goes through many
Boylston Street.
Copley Place Tower.
Copley Plaza Hotel.
Richardson's Trinity Church with Pei's Hancock Tower behind.

spaces, many experiences, so that by the time one reaches the destination ones mood has been transformed. The axiality, the light, and the recurrence of rhythms facilitate our movement. Because the library is used primarily in the day, I have described a daytime sequence.

We start at the large, loud, bright Copley Square, one of the most frenetic places in Boston. Each side of the square has its own rhythm. To the left is Boylston Street, a major commercial street with many sizes, colors, textures, and
noises. The other sides are bounded by Copley Place Tower (under construction), busy Copley Plaza Hotel, and Richardson's serene Trinity Church, which faces the library, with I.M. Pei's Hancock Tower behind. The square is active with street musicians. The bus stops at the entrance to the library where the sidewalk is wide and the front steps are large. The building's white concrete and stone cause a glare.

We move into the library, into a low, dark vestibule; the materials are dark in color, and the space is dimly lit. We proceed through a slightly higher space whose light is indirect, but directional. We can't see windows until we have begun our ascent, but light draws us to the stair. We move past a series of niches, columns and a small doorway which relate the hall to the vestibule via a similar rhythm. We walk on an axis from the entrance to the court-
yard through a number of wide but shallow spaces defined by columns and beams. In a short distance, from front door to foot of stair, we have passed through four spaces which already give us the sense of being removed from Copley Square. One final bay like the ones in the hall helps us to start up the stair; the ceiling remains constant, pinching the space slightly.

We ascend the stair to light. The stairwell opens into a high space revealing windows above our
heads. When we reach the main landing we have traversed the building. The windows, still high above, allow us to see only the red tile roof and sky.

As we move toward the next run of stairs, small windows at eye level enable us to see the courtyard, a secret garden. The Italian quality of the court makes it different from the Square, as well as the slightly yellower colors which don't glare as much. There is a serenity to the court that is the antithesis of the Square—it has a well-defined edge, greenery, and cloister which casts shadows and softens the height of the enclosing walls.

The volume of the landing is an intrusion in the courtyard. The force of Copley Square and the entry axis has pushed its way through the perfect geometry of the court. The other three sides remain unphased. The rhythm of the arcade is the same one we saw in the vestibule and hall (see section), though the materials, light and sound have changed.

As we continue up, the stair narrows. The rhythm of the vestibule, hall, and courtyard arcade is again repeated in the niches above the upper runs of the stairs.

Turning twice, we arrive in a much lower space than the stairwell, with darkness in front and bright light from behind. We turn around to see into the court, now from the level of the high windows. The courtyard feels far away as we see it across the stairs; and we know that we have
travelled twice that far. The form of the ceiling, a barrel vault, emphasizes our movement because it is an obstacle which we cross; if the vault ran the other way, if we walked with the vault rather than against it, the space would feel shorter. The number of varied light experiences helps us to notice how many spaces we have moved through. This space is skylit from sixty feet above, capturing the kind of light, like in the Kahn library and in churches, that seems divine and has a quieting effect.
After moving through a slightly squeezed zone, we enter the reading room. At the far side of the reading room, fifty feet away, is Copley Square, twenty feet below. Everything tactile is different from whence we came. It is dark compared to the glare of the entrance plaza, and the screened windows allow us to see only the sky. The light at the people level is uneven, because of the manually controlled table lamps, in contrast to the even and general light outside. It is hushed as opposed to the noise of traffic; books muffle most sounds, but footsteps on the stone floor are loud. It is dark and soft, made of wood and leather, compared to the hard, white marble of the exterior. The coffered ceiling creates a play of light and shadow which makes its height difficult to judge.
The procession has prepared us for a complete change in environment; it has given us the distance, the time, and the experience to enable the change. The sequence causes us to speculate; it transports us from Boston to Italy in one hundred feet. On the other side of this fantasy we enter the reading room, the place of contemplation.

It is much easier intuitively to understand a building's object quality than a poem's, but it is not only because a building is free-standing that it is an artifice. The same coherence demanded of poems is necessary. For instance, there must be a consistency among plan, section, and elevation. From Copley Square we see the main elevation of the Boston Public Library. It tells us where to enter, that the lower floor is less important than the upper floor, that the reading room is behind the row of huge windows.
The language of the building is part of its object quality. The limited palate of materials and their use contribute to the building's coherence. The building's organization gives us clues through its model, the Italian palazzo. It tells us through its monumental classicism that this is an important public building. The message of this building, like the New York Public Library, is that if the public is educated the city will be great. Its inscription says "The Public Library of the City of Boston Built by the People and Dedicated to the Advancement of Learning," and so does its form.

***

It is the cognitive process of metaphor that allows us to make the connections between rhythmic patterns and Italian villas, between the light in an entrance room and the light in a church, between a big classical building and some place public and important, between sibilants and plosives and whispering and spitting, between a modern brick box and the buildings throughout New England, between the words "where light and shade repose" and a Gothic vaulted ceiling; between each of these experiences and ten or thirty seemingly unrelated others. As Aristotle has told us, the ability to make metaphors is ultimately what makes poets in any medium. It is not more words that are necessary to communicate poetically, but the right ones. One cannot make an otherwise unimaginative building poetic by adding ornament at the eleventh hour if there is extra money. The poetry of the building is not linked to style; it is neither
a question of quantity, whether less is more or whether less is a bore, but of the quality of each decision as a contribution to the work.

Words like "speculation" have a negative, frivolous, time-consuming, self-indulgent connotation. But I would posit that if we would learn to design poetically, to engage and to encourage and gratify speculation, our buildings would be more efficient than the machines we have tried so long to invent and then emulate. Machines, like ineluctable, definitive thought, lack the depth and breadth of human beings. Consciously reintroducing poetry into architecture is an attempt to enrich by creating an evocative place rather than to elucidate by creating a barren space.
Part Two: a design

The stated purpose of the thesis is to use poetry—that is, poetic verse—as a model for relearning the expression of architectural ideas in such a way that will encourage people to speculate and to form imaginative connections. I have attempted in the first part to do this in an essay. This second part is the presentation of a synthetic interpretation of these ideas.

The design is of a library for Barnard College, the women's undergraduate school of Columbia University. Though any building has poetic potential, a library is a building in which it is appropriate to speak strongly, both inside and out; the architecture is not in competition with any other artistic activity as might be true in a museum or in a theatre.
Somewhat contrary to my earlier stand on artists' personal intentions, that they are of interest to the audience only in as much as they are recognizable in the work, I must state a few of my own in order to make an understandable connection between the two parts of this work.

The passage from Milton's *Paradise Lost*, quoted and analyzed in the essay, was the intended model for the library. It was chosen in part for its theme of the pursuit of knowledge, which is presented in a way I felt was also appropriate for Barnard's Library. Knowledge, linked with Godliness, is a goal; once achieved, it is not what we had expected, but there is no turning back. Barnard, as a women's college, is familiar with the dilemma between the two polarities, whether one is happier in an uneducated, mother-wife state or in the professional world (or both). Obviously, women who go to school there, like Adam and Eve, are committed to the latter two, but the question is hauntingly present. The question is apparently a universal one which I ask especially in reference to women in higher education. A college library building might appropriately address such an issue. Some allusion has been made in form to this seeming perfection that never quite exists, as in the overall symmetry of the reading room and the building entrance and hall, in which a tension is felt in that almost nothing is truly symmetrical, and the symmetries are played against the asymmetries. Unfortunately only this more abstract idea has been achieved; the expression of the question of the value of knowledge hasn't been sustained to a point where it is legible.
The richness of poetry comes in part from the suggestiveness of its language which connects us to many experiences at once. Each decision in design from the urbanistic attitudes through the details has the potential to connect us to a whole body of experience. Poetry depends on a facile, creative, and tangible use of language. For instance, ornament can extend architectural meaning into the small scale and must be part of that coherence which enables us to engage. My intention to work with some modified form of classical language and my attempt to design ornament are perhaps the least successful aspects of the design; the language of the library has not yet succeeded in being controllably suggestive.

The procession of the building, a spiral which takes us from the intense, demanding urban campus to a view of it from afar, is expressive of the theme of a library as a retreat from which to re-negotiate the world. It is perhaps the most successful part of the building in its understanding of the structures of poetic verse and how they can be applied to architecture; the overall form, the secondary structure of pauses and how to create them, the rhythm which keeps us moving and against which we perceive deviations are among the lessons more successfully gleaned from the Milton passage.

Historically, there are two types of libraries. There is the large room with books around the edges, the ancestor of the reading room, which monumentalizes the book and the architecture. And there is the row of sidelit alcoves, historically found in monasteries, in which each person sat
with his few books around him; this is known to us as the carrel. As the volume of books increased, especially after the invention of the printing press, more room was required in which to store materials, and stacks of various sorts were invented.¹

Functionally, a library is a space in which to read and to store books, periodicals, and now video tapes and other materials of recent invention. This view of a library, as an information center, discloses that we have lost track of what else a library is. In addition to having the resources to store and lend, a library is a place. People spend long hours there thinking and creating, reading and relaxing. The architect must provide an environment supportive of all of these activities.

Barnard College is a small women’s college in a big university in an international city. It was founded in 1889 its purpose being "to secure to young women the best instruction in the highest

¹Brawne, Libraries, pp. 10-11.
Barnard has a slightly aloof relationship to the rest of the university, more than ever now that the men's undergraduate school, Columbia College, began admitting women in 1982 following Barnard's final refusal to merge. As cross registration is easy, Barnard has the best of both worlds; she is able to retain her independence as one of the nation's foremost colleges for women, while at the same time enjoying access to the resources of Columbia University.

Barnard has a separate campus directly across Broadway from the campus which houses the majority of the University. The Barnard Campus, like the University Campus, is a series of courtyards, but Barnard is much more a design of consensus than the University Campus, which was designed by McKim, Mead, and White. Barnard runs from 116th Street to 120th Street on the narrow block between Broadway and Claremont Avenue. Claremont Avenue is a well-kempt narrow, residential street.

The campus is composed of five buildings, the
Library being the center. Two horse-shoe buildings, each built of three buildings added together, bracket the campus. The south one Brooks, Hewitt and Reid Hall, is dormitories; the north one, Milbank is administrative offices and classrooms. Barnard Hall, the fat building, completes both the dormitory court and the library court. Completing the northern court of Milbank Hall is a twelve foot rise in grade up to a small plaza with a science tower and the student center. The library sits at the center of the four buildings in a four foot dip in grade.

The campus slopes down from 116th Street to 120th Street approximately fifteen feet and the same amount from Broadway to Claremont; so the Barnard buildings sit on high bases facing Claremont and...
low bases facing the campus. Barnard's main gates are in front of Barnard Hall and are on axis with the secondary 118th Street gates of Columbia, across Broadway, which are on a lateral axis with Low Library, the organizing building of the McKim, Mead, and White scheme.

The program of the building is for a library used primarily by Barnard College students for studying and reserve reading. The library's collection
is small, 150,000 volumes, compared to the five million volumes in Columbia's Butler Library.

Each semester Barnard collects books requested by the faculty from the nearly twenty university libraries and holds them on reserve. The general collection is used primarily as reference for the reserve reading; so it is important that the stack is easily accessible from the reading room. Barnard owns some good special collections, most notably of books by and about American women authors, including an Alumnae Collection. Also there is a large collection of musical and spoken records and the Barnard Archives. An exhibit area has been added to the program for the growing arts and architecture department. The library is the backdrop for Barnard's commencement exercises.

Urbanistically, the library refers to the other buildings on campus. The court is enclosed by the library and by an addition to the student center which I have made both to complete the court and to get light into the basement cafe-
teria by opening it into the lawn. The building is formally an addition to the library. It reads as an extension of the stack because the stack volume extends slightly beyond the reading room in line with it; yet the addition and the reading room share a similar vocabulary as they are born of a similar vocabulary of spaces. The two buildings are unattached because they are functionally different but, more importantly, in respect of the axis that runs from end to end of the College. Trees protect the east side of the courtyard from Broadway, making the court an introverted haven much as the library is and much as the college is--introspective yet intensely connected to the outside.

The general concept of the library is of a place which, though it is physically and perhaps functionally the central building on campus, is a retreat. Writing, thinking, and learning are introverted and introspective activities compared to much of campus life. A library is a haven which allows separation from the rest of the world but a renegotiation with it. One observes the world from afar while reading and contemplating; one can see up and down Broadway from the two-person-sized bays of the reading room, and one is totally protected from, yet totally in contact with, the grassy court when sitting in one of the roof niches.

The organizational concept of a building puts us in touch with buildings of similar types. For instance, the libraries designed by Richardson have the form of a church, a long nave in which books are kept in niches like saints, a transept
where we enter, and an apse or altar for the reading room. The form links religion, or godliness, with wisdom, wisdom with knowledge, knowledge with information. The church association teaches us how we are expected to behave in a library--the tone of behavior in both places is similar.

The organizational concept of the Barnard College Library has many readings. It is a court, the reading room, wrapped by a servant space, the stack, which has been cut away. Also the reading room is reminiscent of a dying breed of libraries, grand yet personable; it is a jewel protected from the city by the stack, and exposed only to

Richardson, the stacks of Burlington Library.
Richardson, plan of Burlington Library.
the controlled environment of the campus. Again, it is a new, unornamented building wrapping an old ornamented one, which is seen in the figural spaces of the reading room volume in contrast to the more flowing space of the stack.

The architectural language of the campus is classical. I have attempted to be classical without being historicist. I have used Georgian room proportions, with the ceiling height generally two-thirds of the width of the room and I have tried to create a hierarchy of rooms while not denying the flowing space of the Modern Movement.

Time is difficult to feel in a library, both in the sense of being as close to Aristotle as to Joan Didion and in the sense of becoming absorbed in one’s work and loosing track of time. The mixture of traditional and contemporary forms is an illusion to the notion of confused time.

The materials of the building are supportive of
the organizational readings. They are primarily cast-in-place concrete, granite, and brick. The secondary materials are wood, carpet, and glass. The structure is concrete; the secondary structure (the reading room columns) is metal, reminiscent of Labrouste's Biblioteque Nationale. The concrete has an aggregate of the granite, to make the color of the concrete warmer and more compatible with the stone.

The materials throughout are the same; concrete,
stone, wood, and carpet occur in different proportions and different refinement, in reference to both the classical tradition of the servant spaces below and the *piano nobile* above, with its rusticated base, and refined upper story, and to the human body with warmer, softer materials where we will touch them.

As we have studied in Milton's *Paradise Lost*, the understandability of the sequence depends on a perceivable form. The general form is overlayed with a middle scale, a quicker rhythm, the series of little climaxes that prepare us for the climax; the smaller scales include shifts in the meter and sounds that demand special attention. When the meter is altered, the poem must gratify the reader's speculation as to why it has been altered; the levels must connect. This is necessary in architecture too.

The intention of the procession is to slow people's movement and change their emotional orientation. It does this through its division into small rooms and its circuitous route. Experientially we move
from a place without books and contemplation, the
court outside, to a place with, by walking through
an exhibit area, which by nature is public but
somewhat quiet, past a few open and public reading areas, where we see the beginnings of books.
As we move up we are not suddenly, but gradually,
completely surrounded by books, but we see them
through windows. Then we arrive at the reading
room or stacks.

The movement is toward light, which has metaphor-
ical connotations. Wisdom is associated with
light. As we move up the stair, we always move
toward light, and as we get further, the light is
brighter; the far end of the reading room has
light entering from three sides.

One approaches the building primarily from the
side, from the other buildings or through the
gates at either end of the campus. Though the
building sits in a bowl I have raised the entry
even with the ground levels to the north and
south in order to allow easy access, to create a
platform for commencement, to make a porch that
is paved, in contrast to the grassy surface of the
rest of the court. Because we approach from the
side, the entrance steps out to announce itself.
On turning into it, one begins the major pro-
cession to the reading room which takes the form
of a spiral.

In order to take people far from the immediacy of
the real world--to be connected but discontinu-
ous--I have broken the procession into
many spaces and changes in direction which create
an illusion of distance. The entry space is a
figure whose overall form reinforces the axiالية of the entrance and the main procession; it points the way. The two side walls, which zig-zag toward one another, are different from one another in use and form but in rhythm they are the same. One is solid, saying sit and stay, and one is porous, stepping back and encouraging entry to the exhibit space by showing part of the exhibit. It is the wall to the side where the building is longer that is open; the closed wall shoves us slightly to the right, as the whole building does.

The shape of the stair ceiling makes individual spaces which encourage people to move slower, to stop at landings, to look. A long stair with a constant ceiling would have streamlined the movement to the reading room. As we move toward the stair the ceiling first pinches, then gets quite high from which we move to the right and up because of the drop in ceiling height straight ahead. The ceiling has been raised to get light, from the reading room, onto the first landing, as light is associated with public space. Where the ceiling pinches and the space gets squat, people won't linger. The rhythm of the column grid is in counterpoint to the ceiling changes and the runs of the stairs.

As we move up past the periodicals lounge, the ceiling drops suddenly causing us to slow down. When the ceiling gets higher, we are surrounded by books. As we reach the top of the stairs we are in a cramped, low space from which we enter the catalogue or stack stairs (straight ahead), the stack (to the left), or the reading room (to the right). Because the space to the right
doubles in height we are drawn to it. There is another height increase as we turn onto the axis of the reading room.

The reading room is widened at this end by bays which are themselves private, but make this end of the room more public. As we move down, the room pinches (over the building entry) making the far end even more private, reinforced by its narrower column bays and light coming from three sides. The spiral, by nature, takes us geographically to a place very close to where we began; emotionally we are very far away.

The reading room refers to the qualities of traditional ones, the Avery Architectural Library
at Columbia and the Wren Library at Trinity College, Cambridge, such as symmetrical (and therefore calm and stable) high spaces, mostly of three square (or cube) proportions, with very large windows, and with the feeling of being surrounded by books. The reading room is entered at the short end to take advantage of being a long space that changes as we move through it. I have adopted the alcoves of both McKim, Mead, and White and Wren, and have used
them so that they create different experiences expressive of their placement in the reading room: publicness, privateness, bright, dark, big, small.

In the stacks one happens upon other rooms, more like living rooms than formal reading rooms, which are sometimes associated with special collections, or catalogue and are furnished with the silk brocade winged back chairs which have often been willed to Barnard as part of a whole estate willed to the school. These "living rooms" are places for reading curled up in front of a fire, to allow us comfortable, informal ways to read, both communal and private. The living rooms occur at the northwest corner as aids in the stack's change of direction, and at the southeast corner to take advantage of the south light. These rooms and the carrels which edge the outer side of the stack protect the books from the light.

We are most familiar with the English language and therefore are most facile in composing and understanding it. In architecture, we often don't get familiar enough with a language of form, either as architects or as inhabitants of buildings, to be able to articulate or understand the poetry. This is aggravated by a philosophy that makes architects into service professionals much like lawyers, doctors, or social workers. As an art, architecture is special in that it has the potential to accommodate both our physical and our spiritual needs; but the art has been stripped from architecture and replaced by a false scientific cloak which isn't even as
creative as genuine scientific inquiry. Or a journalistic approach to architecture is taken; the building seems to give the facts, but what are the facts? The facts certainly must be more than the location of program elements. By using the language of architecture poetically, in ways that encourage people to speculate and to form imaginative connections, clarity and efficiency needn't be lost in order to gain richness.

***

The drawings follow . . .
Drawings

Site plan & perspective
First floor plan
Sections & stair detail
Second floor plan
Interior perspective & sections
Bay detail
Axonometric
LIBRARY FOR BARNARD COLLEGE

FIRST FLOOR PLAN
DETAIL OF STAIR
SECTIONS A-A AND B-B

SCALE IN FEET
Sketches
CALYPSO FACADE STUDY
FEB. '83
ORNAMENT
STUDY FOR BAY
WINDOWS
APRIL '28
List of Illustrations

"Eve tempted" by J.R.S. Stanhope, from William Gaunt's *The Restless Century*.

The library of Philips Exeter Academy, Exeter, New Hampshire, by Louis I. Kahn, from *Global Architecture* #35.

Kings College Chapel, Cambridge, from *Architecture in Britain: the Middle Ages*.

Kings College Chapel, Cambridge, vaulting, from *Leedy Fan Vaulting*.

Exeter, plans and section, from Ronner, *Complete Works of Louis I. Kahn*.

Diagrams of Exeter library.

Exeter, concrete structure, from *Global Architecture* #35.

Exeter, brick structure, from *Global Architecture* #35.

Exeter, elevation, *Complete Works*.

Exeter, circular openings, *Complete Works*.


Exeter, carrel, Complete Works.

Boston Public Library, McKim, Mead, and White, from Monograph of the Work of McKim, Mead, and White.

BPL, plans and elevation, from Monograph of McKim, Mead, and White.

Boylston Street, photo by Alan Joslin.

Copley Plaza, photo by Alan Joslin.

Copley Place, photo by Alan Joslin.

Trinity Church, photo by Alan Joslin.

BPL, section.

BPL, stairs, photo by Alan Joslin.

BPL, courtyard from second floor, photo by Alan Joslin.

BPL, ante-space to reading room, from Monograph of the Work of McKim, Mead, and White.

BPL, reading room, from Monograph of the Work of McKim, Mead, and White.

BPL, elevation, from Monograph of the Work of McKim, Mead, and White.

Barnard College library, aerial perspective.

A reading room by C.L. Engel, from Brawne's Libraries.


Diagram of Barnard College and Columbia University.

Claremont Avenue, photo by Deborah Epstein.

Barnard College, Brooks, Hewitt, and Reid Halls, photo by Deborah Epstein.
Barnard College, Milbank Hall, photo by Deborah Epstein.

Barnard College, Barnard Hall, from Barnard College catalogue.

Barnard College, Altschul Hall and MacIntosh Student Center, photo by Deborah Epstein.

Barnard College, Main gates, from a postcard.

Barnard College, library court from Barnard Hall, photo by Deborah Epstein.

Richardson, plan of Burlington Library, from Van Rensselaer's Henry Hobson Richardson and His Works.

Richardson, sketch of the library at Burlington, from Van Rensselaer's Henry Hobson Richardson and His Works.

Barnard College Library, plan diagram.

Labrouste's Bibliothèque Nationale, from Brawne's Libraries.

Barnard College Library, diagram of procession.

Avery Library, Columbia University, from Monograph of the Work of McKim, Mead, and White.

Wren Library, Trinity College, Cambridge, from Brawne's Libraries.

A special thank you to Alan Joslin for drawing diagrams, photographing, and organizing illustrations.
Bibliography

Select Bibliography


Clarke, David, Inside Out, unpublished manuscript, 1983.


Other Works Consulted


H.H. Richardson and His Office, exhibition organized by the Department of Printing and Graphic Arts Harvard College Library, (Boston: Thomas Todd Company) 1974.


Van Renesselaer, Mrs. Schuyler, Henry Hobson Richardson and His Works, (Boston: Houghton, Mifflin and Co.) 1888.
