Rhythm, Grid and Collage: Building a Design Business Incubator

Robert David Smith
Virginia Commonwealth University

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rhythm, grid and collage:
building a design business incubator

Robert Smith
MFA, Interior Environments
Virginia Commonwealth University
Department of Interior Design

May, 2008
Much gratitude goes out to ... 

... the faculty of the Department of Interior Design at VCU for their dedication to this program and their students. I especially want to thank Camden Whitehead and Christiana Lafazani for their guidance, advice and support throughout this process.

... my partner, Bill Sorrell, who has been tremendous in his encouragement and use of his Yankee fortitude (and tone!) to help keep me on track throughout this process.

... Scott Dietrick, for his friendship and for granting me a flexible schedule that allowed me to continue paying the mortgage while pursuing this degree. You are the man!
The idea of rhythm as applied to interior space is the basis for this thesis. The site is an old warehouse with a structure that contains a repetitive rhythm in the form of a columnar grid and a corresponding fenestration pattern, yet the building also has an atypical wedge shape. The program is a design business incubator, a place where design business startups, recent graduates of Virginia design programs, can begin their design careers and find their rhythm in a cooperative and supportive environment, a collage of design businesses, if you will.

Rhythm is essential in our lives, from the beating of our hearts to the rising and setting of the sun. Rhythm is also essential to spatial design. Our built environments require some form of pattern in order to help create a sense of stability and familiarity with our surroundings.

Whether in music or painting, poetry or design, rhythm starts with simple repetition. But rhythm moves beyond mere repetition to include a diverse assortment of elements. The more complex a rhythm, the more we can become involved with that rhythm and consequently with the object that provides the rhythm.

How does rhythm translate into space and time? How is it possible to develop a more complex and expressive rhythm in a particular space? What might be considered more expressive? How can this old warehouse function as a design business incubator while new rhythms are introduced into the mix of old rhythms through the fulfillment of this program and thereby create a collage of space?
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A mostly forgotten artifact, a late 19th Century brick and timber warehouse, its tall arched windows bricked up decades ago, lives again as a design business incubator for the VCU and Richmond design communities. With an atypical wedge shape, but typical columnar grid, this warehouse offers an opportunity to explore the idea of rhythm and its relationship to, and application within, architectural space.

Each year, Virginia universities issue degrees in various design disciplines to many undergraduate and graduate students. About 40% of these graduates will become self-employed at some point in their career. In a design business incubator, these graduates could have the opportunity to work out design ideas in a collaborative and constructive environment while gaining valuable business experience. They “graduate” from the incubator with a solid foundation for design careers and businesses.

Business incubation provides an array of support services for fledgling startup companies. Studio/office space, network connectivity, meeting rooms, business counseling and clerical services are typical services available for discounted fees. The new companies stay in the incubator for a specific amount of time while developing company portfolios and strengthening their business acumen. Business incubation also involves and benefits the local community by sharing information, providing opportunities for networking, and encouraging small business development within the community.

<table>
<thead>
<tr>
<th>Site Address:</th>
<th>840 Hermitage Rd, Richmond, VA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Building Use:</td>
<td>Business</td>
</tr>
<tr>
<td>Square Footage:</td>
<td>15,000</td>
</tr>
<tr>
<td>Maximum Occupancy:</td>
<td>150</td>
</tr>
<tr>
<td>Means of Egress:</td>
<td>Four</td>
</tr>
<tr>
<td>Accessibility Areas:</td>
<td>None required</td>
</tr>
<tr>
<td>Restrooms:</td>
<td>Two</td>
</tr>
<tr>
<td>Water Fountains:</td>
<td>Two</td>
</tr>
</tbody>
</table>
We must stop building!

Yes, I know that sounds crazy and more than naïve, especially coming from someone who just indebted himself tens of thousands of dollars in pursuit of an M.F.A. in Interior Environments. But hear me out.

Most of us are obsessed with having. Having bigger, better, larger, higher, wider, newer, fancier, what have you. We collectively have a mistaken notion that “having” will save us. Having for the sake of having may save the economy, which depends on sustained growth, but having for the sake of having does not save us.

Our lives do not depend on having or building more, on growth that cannot be sustained. We can live well without building more. We must take care of what we already have and make good use of that. Yes, I know that building will continue. There will always be a need: times change, populations shift, hurricanes and other unforeseen events happen, places wear out no matter how well made. But we must build out of necessity and not because we’re obsessively compelled to have bigger, better, larger. We must use the objects and the buildings that we have, and design and build only out of life’s necessity and with the purpose to support all of life.

My grandfather designed and built furniture for his family. This was partly a hobby and partly a necessity. He didn’t have much money and, back then, he didn’t have super warehouses like Lowe’s or Home Depot. So he looked around his world to find objects that could be used in his endeavors. In his world, all things were relevant, no matter how meager. There was nothing extraneous, so he paid attention to what he found and what he had. In doing so, he was able to give new life to artifacts and with them he created furniture that supported his family, and that now supports mine.

We must also take care of our artifacts, which is everything we already have, before creating anew. We must design so that the things or places that we do build can live again when their current function ends. Otherwise we will only continue depleting our environment of precious resources in order to have more things that cannot save us.

We must stop building.
The site is located at 840 Hermitage Road, just north of the C.F. Sauer Co., which owns the building. The brick and timber building is approximately 15,000 sq. ft. and is owned by the C.F. Sauer Company. The building is used as a storage warehouse and is typical of many warehouses in the Richmond area - red brick, a grid of timber columns and beams, wood trusses and a concrete floor.

Hermitage Road was once a trolley route in the early 1900s (hence the four-lane diagonal route through an otherwise rectilinear city grid), and it has been suggested by an employee of the C.F. Sauer Co. that the building was once used for trolley car maintenance. Images from a 1925 Sanborn Fire Insurance map indicate that rail lines were located on the Hermitage Road side of the building and a coal yard was located on the west side of the building.
Plan and Structure
Black = structure
Red = bricked in fenestration

View from Hermitage Rd entrance
Looking west down main corridor

View from mezzanine
The only remaining arched window

site:
840 hermitage road, richmond, virginia
Site Analysis studies

Several site analysis studies were performed to gain knowledge of the site and its surroundings in order to understand the forces at play on the building.

The site is nestled in a bowl-like area between two busy streets, Broad and Leigh. With the exception of a building to the south and a fire station to the north, vacant lots surround the building and creating a sense of void in this area. Vehicular and pedestrian traffic is comprised mainly of those passing through from north to south or vice versa.
Natural light

skylights (nine total)

two windows

one window

Existing Plan

Structure

Geometry

Repetitive units
Site Case Study #1

Corrugated Box Building
201 W. 7th Street, Richmond, VA
www.corrugatedboxbuilding.com

- Architect: 3North
- Located in the Old Manchester district of Richmond
- Two-story, 40,000 sq. ft., brick historic industrial warehouse
- Built in 1920 for the Atlantic Corrugated Box Company
- Grid of timber columns and beams
- Excellent model of adaptive reuse, urban renewal and high-tech interior design
- Explores the connection between historic and new

The Corrugated Box Building is located in the Old Manchester district of Richmond. The historical industrial building is a both a model of adaptive reuse and a model of a program of “open, collaborative workspace”. Several design-centered businesses, including 3North, the architects and designers of the renovated space, co-exist this 40,000 sq. ft. historical industrial building. Only thick fabric “walls” separate them. Shared services are pushed to the southeast edge of the building, “allowing for an open and flexible floor plan which emphasizes both the scale of the space and the connectedness of the tenants. In addition, this approach creates a central circulation route which encourages interaction and organizes shared spaces such as reception, an informal lounge, and a large, multi-media conference room.” (from www.corrugatedboxbuilding.com)
Site Case Study #2

Classroom, Laboratory, Administration Building
California State Polytechnic, Pomona, California
www.csupomona.edu

- Architect: Antoine Predock Architect PC
- 235,000 sq. ft.

My interest in the building concerned the use of the triangular shape and how the building program functions with such a shape.

Built in the early 1990s, the Classroom/Laboratory/Administration building (CLA) features a triangular tower and sandstone finish. The CLA building is essentially a square and a triangle with each geometric area serving different functions. The tower - the triangle section - houses administrative, faculty and student functions. The square is an open-circulation classroom/laboratory that functions as the core for computer labs and classrooms. The educational facility provides 10 lecture rooms, 40 faculty offices, a television studio and 21 computer laboratories.

symmetry and balance

plan to elevation

units to whole
Site Case Study #3

New York Designs
Long Island City, NY
www.nydesigns.org

- Architect: Resolution: 4 Architecture (pronounced "RES4")

This building at 45-50 30th Street in Long Island City (a part of Queens, NY) is a concrete slab, column-grid, multi-story warehouse space that used to be a bakery and then the International Design Center of New York. According to Brian Thomas of RES4, the design goal for the space on the seventh floor of this building was to create a “donut” layout with studios along the exterior walls and another group of studios and service spaces in the center with a central corridor running between the two. A translucent wall system was used for the interior walls so that daylight can extend throughout the entire space.

RES4’s current preoccupation, as stated on their website, is “the modern modular,” which is about building quality custom homes as affordable prices through the use of prefabrication of modules. Their design for the warehouse space occupied by New York Designs in Long Island City exhibits some of this preoccupation in that the space is designed to be flexible and modular to fit the current space requirements of the tenants of NY Designs.

Plans, diagrams and photos courtesy of RES4, New York, NY.
seventh floor plan

a: reception desk
b: staff offices
c: kitchen
d: lounge
According to Stuart Rosenfield of Regional Technology Strategies, Inc., in Carrboro, NC, “employment in creative occupations is growing faster than [the] average” for all other occupations. In the ten year period ending in 2012, Rosenfield projects that art, design and media occupations will experience on average a 16.5% growth rate, compared to 8.0% for all other occupations. In addition, about 40% of those in the creative fields will be self-employed.\(^1\)

These self-employed creatives are the focus of this program of the VCU Design Center, an incubator for fledging design businesses. Developing a smashing design or groovy product will do little good without the business acumen to support it. Designers, especially those who are self-employed, need to be skilled in the art of business in order to develop thriving businesses. Universities and colleges are becoming aware of this need and are starting to offer various levels of support via programs aimed at helping creatives develop business skills that will support their creative endeavors.

One such program is New York Designs, located in Long Island City. LaGuardia Community College/CUNY and CUNY Economic Development Corporation came together to create this program, called a “Business Center for Designers in New York.” According to www.nydesigns.org, their mission is simply “to grow New York design firms,” whatever the design discipline.

The VCU Design Center will focus support on graduates and alumni of VCU’s design programs in order to grow Richmond area design firms. These startups will have access to facilities that are necessary to a design business and will also have access to business and design counseling services. The startups can remain in the facility for up to three years as their business is nurtured in a supportive environment filled with businesses similar to their own.

<table>
<thead>
<tr>
<th>The VCU Design Center will provide:</th>
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<tbody>
<tr>
<td>• Fifteen studio space rentals for design business startups,</td>
</tr>
<tr>
<td>• two conference and four smaller meeting rooms,</td>
</tr>
<tr>
<td>• shared services (reception, printers, plotters, scanners, faxing, mail),</td>
</tr>
<tr>
<td>• materials library, workshop and training room,</td>
</tr>
<tr>
<td>• gallery space,</td>
</tr>
<tr>
<td>• kitchen, dining and lounge spaces,</td>
</tr>
<tr>
<td>• business skills development training and counseling and</td>
</tr>
<tr>
<td>• a supportive and cooperative environment with other designers in other design disciplines</td>
</tr>
</tbody>
</table>

\(^1\) Rosenfield, pp. 18 - 20.
Space Allocation for the VCU Design Center
Program Case Study #1

New York Designs
45-50 30th St., Long Island City, NY
www.nydesigns.org

NY Designs, a design business center and incubator, was begun in 2004 as a collaboration between LaGuardian Community College in Long Island City, New York, and CUNY Economic Development Corporation. The design center is located on the eighth floor of a warehouse that used to be, fittingly, the International Design Center of New York warehouse.

The mission of NY Designs is quite simple: “to grow NY design firms.” The center has room for up to 20 design firms that encompass a broad range of design disciplines, including product design, industrial design, fashion design, interior design, architecture, lighting design, set design, jewelry and craft.

Physical resources
• 25,000 sq. ft. includes tenant studio space, common spaces such as conference rooms, freight elevator and storage, a materials library, gallery and a photo shooting studio
• 10,000 sq. ft. prototype lab for building prototypes and models, includes:
  • woodworking and plastic fabrication equipment, metalworking equipment
  • Digital lab, PCs with CAD/CAM software, Apple computers
  • large format printer
  • Mini-lab for building scale models, laser cutter
• 24 hour accessibility and security
• Common spaces: conference rooms, freight elevator, storage
• Fiber optic network and free broadband Internet access

Business support resources
• Design business courses, Design skills courses
• Green design courses
• Business counseling

NY Designs allocation of space:

<table>
<thead>
<tr>
<th></th>
<th>Sq. ft</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Studios</td>
<td>5,737</td>
<td>27.2</td>
</tr>
<tr>
<td>Resident Firms</td>
<td>1,949</td>
<td>9.2</td>
</tr>
<tr>
<td>Conference Rooms</td>
<td>754</td>
<td>3.6</td>
</tr>
<tr>
<td>Lounge</td>
<td>745</td>
<td>3.5</td>
</tr>
<tr>
<td>Materials Library</td>
<td>425</td>
<td>2.0</td>
</tr>
<tr>
<td>Photo Studio</td>
<td>150</td>
<td>0.7</td>
</tr>
<tr>
<td>Staff Areas</td>
<td>910</td>
<td>4.3</td>
</tr>
<tr>
<td>Lobby / Reception</td>
<td>1,100</td>
<td>5.2</td>
</tr>
<tr>
<td>Gallery</td>
<td>425</td>
<td>2.0</td>
</tr>
<tr>
<td>Restrooms</td>
<td>570</td>
<td>2.7</td>
</tr>
<tr>
<td>Kitchen</td>
<td>120</td>
<td>0.6</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>8,235</td>
<td>39.0</td>
</tr>
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</table>

Lobby / reception

Materials room

Studio and kitchen
The Corrugated Box Building is located in the Old Manchester district of Richmond. The historical industrial building is a both a model of adaptive reuse and a model of a program of "open, collaborative workspace". Several design-centered businesses, including 3North, the architects and designers of the renovated space, co-exist this 40,000 sq. ft. historical industrial building. Only thick fabric “walls” separate them. Shared services are pushed to the southeast edge of the building, allowing for an open and flexible floor plan which emphasizes both the scale of the space and the connectedness of the tenants. In addition, this approach creates a central circulation route which encourages interaction and organizes shared spaces such as reception, an informal lounge, and a large, multi-media conference room.”
(from www.corrugatedboxbuilding.com)

A two-story atrium located the southeast corner of the building further connects the tenants on the first and second floors. As well, there is space on the first floor for retail shops, a cafe and a gallery which would help to integrate the building with the area and further the revitalization efforts of the Old Manchester district.
Located in downtown Richmond, AdvanTech was started in 1999 as a "non-profit, small business incubator, designed to foster technology companies that are in the second stage of business development. Car maintenance, though this has not been proved." There are currently 33 various technology-related companies located at the site.

The goal and mission of AdvanTech is to contribute directly to economic growth and job creation in the area by providing state of the art physical space and business and technical support to entrepreneurs. The Industrial Development Authority in partnership with business development experts will encourage the formation of new, high-growth businesses with wealth and new job creation as the benchmarks for project success.
Resident Membership features:

Physical resources
- 53,000 sq. ft. office building with 100 fully furnished suites
- Break rooms and mini-kitchens on each floor with vending machines
- Stress relief room, equipped with video games, exercise equipment and shower
- 8 Conference rooms
- Professional Training Facility
- Free Parking

Technology resources
- Building wired with CAT-5, high-speed T-1 Internet access in every office
- Fully digital, software based phone and voice mail system with multiple line
- State-of-the-art Video Conferencing Center
- Access to audio-visual equipment, including digital and video cameras, LCD slide and overhead projectors with screens
- Copy center with color printers and facsimile
- Card accessible security system, 24 hours a day and 7 days a week

Business support resources
- Reception, clerical, janitorial and maintenance services
- Mail services
- Access to professional training, seminars and consultation
- Reference material, such as financial and legal references
- Software programs relevant for small business development
- Counselor from the Greater Richmond Small Business Development Center is available by appointment

Auxiliary Membership features:

Access To Space
- available offices for meetings with clients, investors, and consultants
- available conference rooms, including a state-of the art video conferencing center

Access To Professional Resources
- Forward calls to the AdvanTech receptionist
- Lease audio-visual equipment on a per-hour basis
- Use the Copy Center
- Receive clerical support as needed
- Attend AdvanTech’s training seminars and information sessions
- Use AdvanTech’s mailing address and services
What is rhythm?

We hear and feel the rhythm of music or language. We see the rhythm of a painting or a sculpture. Do we also sense the rhythm in the spaces within which we live out our lives? How do the static elements of a building - windows and walls, ceilings and floors, columns and beams - create a rhythm, a movement through time and space, that moves us physically and emotionally, organizes our activity and sustains our activities within the space?

The building at 840 Hermitage Road contains a strong columnar grid and more than a few large bricked-up windows which are placed relative to the columnar grid. This creates a repetition of elements within the space, but only a simple rhythm.
Mere repetition is the most simple rhythm, but mere repetition is difficult in sustaining our attention over extended periods of time. Rhythm requires diversity in order to free itself from the confines of repetition and become an experience, movement through time and space. As in music, architectural rhythm must have either a diverse assortment of elements, a diverse placement of similar elements, or both.

Rhythm is movement.

Rhythm is “movement, fluctuation, or variation marked by the regular recurrence or natural flow of related elements.” - Merriam-Webster Dictionary
I began my exploration of rhythm by studying the existing rhythm of the building, especially the arched windows and the spaces between them. This was the most basic rhythm, a simple repetition of form. I’m wasn’t sure of what I was trying to find, other than an understanding of how the idea of rhythm applied to a physical structure, specifically this one. The building housed a basic rhythm that created a stable environment, but little movement.

...Rhythm is often incorrectly reduced to the notion of a regular repeat. But musicians, designers, dancers and scholars seem to agree that the perception of rhythm, and the intentional act of rhythmizing, is not reducible to the kind of periodic repetition produced by a metronome.... It is a corporeal and mental activity that on one level acknowledges periodic repetition while on another consciously moves to push, pull, syncopate, disrupt, and shift the boredom of regular repetition. It is actually experienced as an irregular pattern.

- Kent Bloomer, “The Nature of Ornament, Rhythm and Metamorphosis in Architecture”
Using my background in music as a source, I decided to play with a rhythm based on a numerical system of order. The basis of the system was a simple, but arbitrary, numbering scheme, one that could be easily repeated. Using a series of lines, such as found in a musical scale, I divided the “scale” into seven sections, each section having four smaller segments, or notes. After the first four notes, the next four notes began one line above the last note in the previous section. The next line of notes began just about the third note in the previous section. Upon reaching the top line of the scale, I repeated the same rhythm as before, but moved downward. Using the numbering scheme, I then created shaded blocks throughout the notes. The shading of the notes was linear in nature: The second block was shaded, then the fourth one after that, then the third one after that, then repeat.

This exploration produced a more complex rhythm that produced visually interesting results. For me, this exercise showed that it is possible to go beyond mere repetition in creating rhythm and still maintain some visual balance between elements. I think it is this balance that we are seeking when we experience architectural space.
In order to explore “going beyond” the columnar grid in order to discover a more interesting rhythm, I took some time to explore grids. I’m not ignoring that the grid is there, but I want to understand the force which pulls me to attach lines in an orthogonal manner to those points in space, creating rectilinear spaces without a second thought.

On several pieces of trace paper, I created a grid pattern and then overlayed the grid with another pattern. I found that I instinctively created patterns that conformed to the grid. The grid acted as a magnet to the lines.
In another set of iterations, I found that I was compelled to either "connect the dots" of the grid, or ignore them and work around them. Finding a balance between this duality was difficult.

Eventually, I had to change my perception of what a grid is, which is simply a set of points in space. That this set of points is represented physically by columns, in this case, does force recognition of their existence. However, the same space occupied by the grid also contains other myriad points in space. Even though these points lack a physical representation, this should not deter one from working within such a space, even if surrounded by a grid of columns.

Ultimately, the grid exists physically, but how much it exists psychologically is a matter of the degree to which the designer is attached to that physical existence.
**collage**

As a means of inspiration in the design process, I used collage to help me consider the possibilities of a plan that “went beyond” the existing grid structure of the building.

Collage is translated from the French verb “coller”, which literally means “to glue”.

Using photographs I had taken of the fenestrations (the few unbricked one, that is) in the building, I created some collages, later overlaying them with an outline of the structural plan of the building.

“In the twentieth century, as in previous centuries, collage has been fashioned from the ordinary and the commonplace. Now, however, the artist replaced the artisan or the amateur. The inception of collage as fine art medium also signaled a radical shift in art, not only in conception but also in perception, process, and end product.”

From these overlays, I found some interesting relationships between the plan outline and lines of the collage. The overlay at the bottom left had lines running primarily parallel and/or perpendicular to the diagonal east wall. The overlay at the right had lines emanating from the wedge corner. Both of these overlays factored into the final design solution.
process case study: paul klee

Paul Klee was born in 1879 in Münchenbuchsee, Switzerland, into a family of musicians. Though famous as a painter, he was skilled as a violinist and throughout his life he would practice violin for one hour each day before picking up a paint brush. Bach and Mozart were his primary inspirations and he thought Mozart to be the “ultimate pinnacle of art”. His love of music explicitly influenced and shaped his paintings and writings.

He chose the life of a painter because, in his opinion, the time of the creativity of the great masters of music had passed. Early in his painting career, he became aware of the parallels between music and art early in his career.

Alter Klang, 1927, oil on cardboard

Alter Klang, literally “old sound” suggests “concepts of melody, harmony and tonality which prevailed in music between the Renaissance and the nineteenth century. It was the group of qualities which Klee most loved in music.”

“Music took on the role of mentor by demonstrating the temporal processes within a piece of music and also by serving as a metaphor for a new, creative painting that could reveal the temporal aspect with its own unique means.”

Swinging, Polyphonic (And a Complementary Repeat), 1931
Pen and ink on scratch paper

2 Düchting, p.10.
Color polyphony

“...pictures with transparent, overlapping layers of paint... the layering of various structured areas produces a composition of “many voices”, a harmony of forms...”³

Polyphonic Setting for White, 1930
Watercolor with pen and ink on paper

Images of Paul Klee paintings are from Paul Klee, Painting and Music by Hajo Düchting.

³ Düchting, p.33.
process case study: antoine predock

Antoine Predock was born in Lebanon, Missouri in 1936 and studied architecture at New Mexico University and Columbia University. In addition to architecture, he studied painting with Elaine DeKooning and Walter Kuhlman, sculpture with John Tatschi and was for some time very involved in modern dance to the point of being co-director of a dance company.

These artistic disciplines have influenced his architecture profoundly. Though his projects extend across the United States, much of his architecture is renowned for its environmentally-rooted connection to American Southwest. Much of this connection derives from Predock’s documentation of the site through drawings and collages, which together become the foundation of his design process and serve to keep his project team, and even contractors, united in concept throughout the entire project.

Palm Bay Resort and Congress Center, Agadir, Morocco

“I wanted to discover the cultural as well as the geographic underpinning: the Atlantic ocean, the mountains, the dune line, and the blowing sirocco. In the collage there is a concentration of vague shapes working in concert with the water that refer to important forces and elements that act on the site, and these forces are responded to directly by the building.”

Images of both collages from Architectural Journeys by Antoine Predock. Images of Palm Bay Resort clay model and the Arizona Science Center are from Antoine Predock 2, edited by Collins and Zimmerman.
“Since at least the 1980s, [Predock] has started each project by fictionalizing its landscape as a journey of discovery with a mural-size collage fabricated from pastels, magic markers, postcards, and pictures clipped out of magazines. Mixing the pictorialism of painting with the constructivism of sculpture, the collage approaches architecture in scale by moving off the drafting table to stretch along a wall: we walk its length, engaging our bodies in the space of the collage and reenacting the architect’s gestural labor when first assembling the image.

Predock then sculpts a clay model in sections of solid and void that plan the project volumetrically as a choreographed sequence of spaces. Using a sculptural medium to painterly effect, the model turns the fictive landscape of the two-dimensional collage into the material landscape of a three-dimensional prototype for the actual building.”

From an essay by Christopher Mead in Korea C3 “Monograph” on www.predock.com.
Steven Holl was born in Bremerton, Washington in 1947 and graduated with honors in 1970 from the University of Washington. He studied in Rome and London prior to starting Steven Holl Architects in 1976 in New York City, where he is also a professor at Columbia University.

During his first year in New York City, in 1977, Holl started making "obsessive black-and-white drawings," which soon evolved into watercolors in a 5x7 format that allowed for ease of use no matter where he was. These watercolors became a morning ritual for him, one that he continues to this day. For Holl, this daily process captures the initial concepts of his many architectural projects and also serves to liberate his imagination, "a method of catching intuition and first thoughts... a technique which sets the imagination free."
“In the meditations associated with the initial conception of a building, its first stirring towards form, space, and light, the watercolors played a crucial role: they gave intuition a primary position. A very rapid concept sketch could simultaneously indicate space and - with the swipe of a brush - the direction of light.”

“A small watercolor sketch fuses intuition with a concept and embodies hopes and desires. This direct mind/eye/hand interaction constitutes a link between all the synapses of the mind to circumambient reality; a much wider range of circuites of decision is opened by this process than by any current digital set-up.”

“All watercolor images by Steven Holl, also from “Written in Water,” a collection of 365 of Steven Holl's 5x7 watercolors created from 1992 - 2001.

All quotes by Steven Holl from “Written in Water.”
Bubble diagrams to start the space planning process.

Three groups of spaces were determined:

1. Studios
2. Shared services
3. Administrative functions
Initial stabs at space planning based on the three distinct areas. The exterior walls, with large arched windows and natural light (after removing the brick!) seemed the most natural location for studio spaces. The space closest to the wedge corner, separated by a brick structural wall, seemed a likely place for administrative functions. The center core of the building was ideal for the shared services area.

Based on the collage process, the central core area began to take on a diagonal orientation that was based on a relationship to the eastern diagonal wall aligned with Hermitage Road.
The initial design sketches for the studio spaces expressed the idea of using platforms to horizontally divide the spaces. I didn’t go far with this because of possible ADA issues and also because this ultimately might prove confusing and ultimately would not develop the visual privacy and rhythm that the studio spaces required.
I then introduced into the studio spaces the idea of a system of panels that could be manipulated by the users of the studios in order to align the space to their current needs. However, the development of a system of panels was problematic, mainly because I was not interested in introducing a system of movable parts that would be manipulated randomly based on changing needs. I wanted a more permanent rhythm of panels within the space to provide a sense of stability and order to the surroundings.
The next idea for the studio spaces was to create partitions that were immovable and seemingly random in their height and length. The partitions could also be set diagonally to the exterior walls, thereby creating a different rhythm within the rectilinear space. These partitions were set on the floor, but ultimately seemed too heavy and created more division than I wanted.
The final design iteration for the studio partitions was to create smaller, lighter partitions by using triptych panels that followed a diagonal pattern. This pattern would connect the studio spaces with the central service core area.

These partitions would be raised off the floor and utilize translucent resin panels to allow light to pass around and through them. These would provide visual privacy and a line of demarcation for the studios.

In addition to the partitions, a system of shelves would extend perpendicularly from the exterior wall inward toward the column. This would provide storage spaces for each studio, visual privacy and be the “wall” that separates the studio spaces from one another.
Makeup of the Studio Partitions

The studio partitions are triptych panels consisting of aluminum, brick and 3form ecoresin panels. The partitions provide visual privacy for the studios and are also the architectural transition between the central core diagonal axis and the rectilinear studios.

The partitions are structured in a rhythmic fashion so that the triptych form of the panel is changes from one studio to the next. For instance, the partition for Studio 1 consists of one 4’ wide panel, a second panel is 6’ in width and the third is 2’ wide. For Studio 2, the rhythm is 2’, 6’, 4’ and for Studio 3 the rhythm is 2’, 4’, 6’.

The panels sit 18” above the floor, allowing light to pass all around them, are 6’ high and are divided into 2’x2’ smaller panels.

The brick used in the panels will come from the opening of the bricked-up windows, expecting that the brick will be usable. The brick will be held in the aluminum channel using aluminum tubing and washers as spacers.
Light and Fenestration Study

The opening of the bricked up windows invoked a study of the natural light that would enter the building.
Initial Perspectives

lobby / reception

lobby / conf. room

south corridor
studio partition

typical studio

corridor

lounge
The plan incorporates three distinct areas:

- **Administrative support** is the face of the design center and includes reception, lobby, administrative offices and the gallery. This space emanates from the wedge corner located at the southeast end of the building.

- **Central Services** is surrounded by the corridor and includes kitchen, restrooms, printing, plotting, materials library, workshop, training room and meeting rooms. The orientation of these spaces is derived from the east-facing diagonal wall.

- **Studios** are located around the perimeter of the building and take on the repetitive characteristics of the columnar grid and fenestration.
The black and white version of the plan without zone indicators.
design: axonometric

This axonometric view displays the drop ceiling location in the administrative area, the lounge deck, and the location of the light media on the roof. The roof monitor will allow morning light from the east to access the interior core of the building.
lobby and reception

Florence Knoll benches and low table

Concrete flooring acid-stained “Aged Leather”

InterfaceFLOR carpet tile “Pop Circles” Color - Peace
studio partition
typical studio

Knoll “Propeller tables and “Chadwick” seating

Birch veneer plywood shelving

EcoSurfaces recycled rubber flooring

Natural birch flat files
materials library

Birch veneer plywood shelves
InterfaceFLOR carpet tile “Nikko”
Color - Hiaki

B Side Pop chair
Design Within Reach
Knoll “Suzanne” lounge seating
Designer Kazuhide Takahama

Kirei Mod coffee table from Iannone Design

InterfaceFLOR carpet tile
“Pictorial”
Color - Vegetation
design: final models
**flooring**

<table>
<thead>
<tr>
<th>Area</th>
<th>Material</th>
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<tbody>
<tr>
<td>Lobby / Gallery</td>
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<td>Conference rooms</td>
<td>carpet tiles (Interface FLOR)</td>
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<tr>
<td>Administrative offices</td>
<td>carpet tiles (Interface FLOR)</td>
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<tr>
<td>Studios</td>
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<td>Corridors</td>
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<td>Meeting rooms</td>
<td>carpet tiles (Interface FLOR)</td>
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<td>Restrooms</td>
<td>tile</td>
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<tr>
<td>Kitchen</td>
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<tr>
<td>Workshop</td>
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<tr>
<td>Training room</td>
<td>carpet tiles (Interface FLOR)</td>
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<tr>
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<tr>
<td>Shared services</td>
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<tr>
<td>Janitorial</td>
<td>stained concrete</td>
</tr>
<tr>
<td>Lounge</td>
<td>carpet tiles (Interface FLOR)</td>
</tr>
</tbody>
</table>

**walls**

Sand-blast paint from brick walls, leaving slight residue of white paint. All other walls to be gypsum board / paint.

**ceilings**

All spaces will have open ceilings with the exception of the kitchen, restrooms, janitorial and network closet, which are all located underneath the lounge.

**lighting**

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<td>Gallery</td>
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<td>Corridors</td>
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<td>Workshop</td>
<td>pendant, recessed</td>
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<td>Training room</td>
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<td>Kitchen</td>
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<td>Restrooms</td>
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<td>Janitorial</td>
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<tr>
<td>Lounge</td>
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</table>
design: furniture

Lobby

Florence Knoll benches and low table

Studios

Knoll “Propeller tables and “Chadwick” seating
Natural birch flat files
Birch veneer plywood shelving

Lounge

Knoll “Suzanne” lounge seating
Designer Kazuhide Takahama
Kirei Mod coffee table from Iannone Design

Materials Library

B Side Pop chair
Design Within Reach


www.advantechva.org: AdvanTech (Maggie Walker Business & Technology Center)

www.aiava.org: AIA Virginia

www.corrugatedboxbuilding.com: Corrugated Box Building

www.nbia.com: National Business Incubator Association


www.predock.com: Antoine Predock Architects PC

www.res4.com: Resolution: 4 Architecture

www.rtsinc.org: Regional Technology Strategies, Inc.

www.stevenholl.com: Steven Holl Architects

www.vbia.com: Virginia Business Incubator Association

www.3north.com: 3North Architects
Rhythm, Grid and Collage: Building a Design Business Incubator in Richmond, Virginia

A mostly forgotten artifact, a late 19th Century brick and timber warehouse, its tall arched windows bricked up decades ago, lives again as a design business incubator for the VCU and Richmond design communities. With an atypical wedge shape, but typical columnar grid, this warehouse offers an opportunity to explore the idea of rhythm and its relationship to, and applications within, architectural space. In this exploration, I asked the following questions:

What is rhythm? How does rhythm apply to space? How might architectural rhythm affect those who use the space and how the space is used? How do existing architectural rhythms inform, encourage and inhibit the redevelopment of interior space? In addition, studies of grids and collage furthered this exploration of rhythm.

site: 840 hermitage road, richmond, virginia

The building at 840 Hermitage Road is currently owned by the C.P. Sauer Co. Hermitage Road runs diagonally through Richmond from Broad Street and extends north to the lake-side area in Henrico County. The brick and timber building is approximately 15,000 square feet and is used as a storage warehouse. The building is typical of many warehouses in the Richmond area with red brick structural walls, a grid of wooden columns and beams and a concrete floor.

Hermitage Road was once a trolley route in the early 1900s, hence the four-lane diagonal route through a more or less redlined city grid. Given this, the possibility exists that the building was once used for trolley car maintenance, or some other vehicle maintenance. Images derived from a Commonwealth of Virginia map of 1925 indicate that both lines were located on the Hermitage Road (east) side of the building. A coal yard was located on the west side of the building.
Panel 2

Site Analysis studies

Several site analysis studies were performed to gain an understanding of the site and its surroundings in order to understand the forces at play on the building. The site is located in a low-rise area between two busy streets. The site is level with the exception of a building to the south and a fire station to the north. Surrounding lots surround the building and creating a sense of enclosure in the area. Vehicular and pedestrian traffic is comprised mainly of those passing through from north to south or vice versa.

program: design business incubator

According to Stuart Rosenfield of Regional Technology Strategies, Inc., in Canonsburg, PA, employment in creative occupations is growing faster than [the] average for all other occupations. In the ten-year period ending in 2012, Rosenfield expects that art, design and media occupations will grow by an average of 16.5% compared to 8.5% for all other occupations. In addition, about 80% of those in the creative fields will be self-employed.

These self-employed creative professionals are the focus of the program of the VCU Design Center, an incubator for fledging design businesses. Developing a successful design or creative product will be difficult without the business acumen to support it. Designers, especially those who are self-employed, need to be skilled in the art of business in order to develop thriving businesses. Universities and colleges are becoming aware of this need and are starting to offer various levels of support via programs aimed at helping creatives develop business skills that will support their creative endeavors.

One such program is New York Designers, located in Long Island City, LaGuardia Community College/CUNY and CUNY Economic Development Corporation came together to create this program called Business Center for Designers in new York. Their mission is simple—to grow new York design firms, whatever the discipline.

The VCU Design Center will focus on graduates and alumni of VCU’s design programs in order to grow Richmond area design firms. These startups will have access to facilities that are necessary to a design business and will also have access to business and design counseling services. The startups can remain in the facility for up to three years as their business is nurtured in a supportive environment filled with businesses similar to their own.

The VCU Design Center will provide:

- Millen studio space rentals for design business startups.
- four conference and four smaller meeting rooms.
- shared services (reception, printers, copiers, scanners, faxing, mail)
- materials library
- workshop
- training room
- gallery space
- kitchen and dining area
- business skills development training and counseling
- a supportive and collaborative environment with other designers in other design disciplines
What is rhythm?

The beat and feel the rhythm of music or language. We see the rhythm of a painting or a sculpture. Can we also trace the rhythm in the spaces, in which we live out our lives? How do the static elements of a building - windows and walls, columns and floors, columns and beams - create a rhythm, a movement through time and space, that moves us physically and emotionally, organizes our activity and sustains our activities within the space?

The building at 440 Hermitage Road contains a strong columnar grid and more than a few large blocked-up windows which are placed relative to the columnar grid. This creates a repetition of elements within the space, but only a simple rhythm.

More repetition is the most simple rhythm, but is difficult in sustaining our attention over longer periods of time. Rhythm requires diversity in order to free itself from the confines of repetition and become an experience, movement through time and space. As in music, architectural rhythm must have either a diverse assortment of elements, a diverse placement of similar elements, or both.

Rhythm is movement.

Rhythm is "movement, fluctuation, or variation marked by the regular recurrence or natural flow of related elements."

-Merriam-Webster Dictionary

process: grids and collage

grids

In order to grasp the possibility of "going beyond" the columnar grid during the design phase, and find a more interesting rhythm, I took some time to explore grids. I'm not limiting that the grid is there, but I want to get away from it in an orthogonal manner to those points in space, creating nonlinear spaces without a second thought.

What else is possible?

collage

As a means of inspiration in the design process, I also used collage to help me consider the possibilities "beyond the grid". Using photographs I had taken of the fenestrations of the ten-untended site, and in the process of finding the layout of collages and overlaid them onto the floor plan.
The design center plan incorporates three distinct areas:

- Administrative support is the core of the design center and includes reception, lobby, administrative offices, and the gallery. This space emanates from the vantage corner located at the southwest end of the building.

- Central Services is surrounded by the corridor and includes kitchen, cafeteria, printing, parking, materials library, workshop, banking area, and meeting rooms. The entrance of these spaces is derived from the existing diagonal wall.

- Studios are located around the perimeter of the building and take on the repetitive characteristics of the column grid and fenestration.
Studio Partitions

The studio partitions are high-density panels consisting of fire-rated, rock and stone panels. The partitions provide noise control for the studios and are also the functional cores of the central core design.

The partitions are located in a tripartite fashion so that the height of the partition runs the entire length of the studio. The panels are painted white and are made of steel. The height of the panels is 8', and the width of each panel is 0'.

The panels are 1' above the floor, allowing light to pass through the panels and creating a sense of openness. The panels are also made of steel, adding strength and durability to the structure.

The panels are designed to be adjustable, allowing for flexibility in the arrangement of the partitions. The panels can be moved to suit the needs of the studio.
Rob Smith was born in Virginia, raised in Kentucky, migrated to Maine and then finally back to Virginia, where he has lived since the mid 1990s.

He received his Bachelor of Science in Theology from Kentucky Christian University. After a short stint in the ministry in Kentucky and in Maine, he worked as a systems programmer and a technical support consultant for several Fortune 500 companies that specialized in the manufacture of aluminum products.

In 2000, he began pursuing his second bachelors degree on a part-time basis at Virginia Commonwealth University in the School of the Arts. In 2006 he began graduate studies in the MFA in Interior Environments program.

Among other interests, Rob is an ardent meditation practitioner in the Zen Buddhist tradition. His experience is teaching him that there is no other moment than this very moment. Best to pay attention to it.

A few words from the Metta Sutta, a teaching of lovingkindness:

May all beings be happy.  
May they be joyous and live in safety.  
All living beings, whether weak or strong,  
In high or middle or low realms of existence,  
Small or great, visible or invisible, near or far,  
Born or to be born, may all beings be happy.

Gassho!