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Organizing Around a Center: A Design Incubator and Business Center

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Organizing Around a Center:
a Design Incubator and Business Center

Mindy Carter
I give profound thanks to many individuals who provided me with guidance and support throughout this project:

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and last but definitely not least

**my studiomates** for sharing your minds, laughter, company, friendship, and molly, your supplies
This thesis explores the development of an interdisciplinary design incubator and community business center in Richmond, Virginia through the adaptive reuse of a retired, historic school building. In contrast to the deteriorating conditions of Patrick Henry School, renewed growth abounds in its extraordinary site surroundings—the 105 acres of Forest Hill Park, which serves as the virtual backyard of the school building. This dualism provided a prime opportunity for discovering the design possibilities in connecting a built space to its physical surroundings and for giving meaningful new life to an abandoned space.
While walking in Forest Hill Park, I often notice the subtle contrast along the line where the treetops meet the sky. These colors represent this observation and other symbolic colors of the park (stone, earth, water, plant life).
This thesis explores the development of an interdisciplinary design incubator and business center in Richmond, Virginia through the adaptive reuse of a retired, historic school building. The design center’s mission is to make the business and practice of design accessible to all of the Richmond community and to enhance the positive influence of design in the area. The center is open to all design disciplines, such as interior design, graphic design, industrial design, fashion design, environmental design, and so forth. As an incubator, the center nurtures and grows new design businesses in a shared, collaborative working environment; as a business center, it provides the necessary resources for design practice and advancement in the surrounding community. In the spirit of a cooperative, the center seeks to attract design resources in the Richmond area as it simultaneously and reciprocally offers its resources in design expansion efforts in the community. With VCU as a progenitor of design in Richmond and well beyond, the design center draws from the School of the Arts talent (students, faculty, and alumni) and provides resources to them in kind.
space parameters
- west side of basement level (est. 4,550 s.f.)
- west side and center area of first floor (est. 6,600 s.f.)
- portion of west side of second floor (est. 1000 s.f.)
- existing auditorium (est. 3,600)

square footage
- 15,750 total s.f.
  - includes 2,550 s.f. of corridors to remain
  - ~13,200 usable s.f.

occupancy
- daily operation: 50 person maximum
  - event operation: 100 person maximum

square footage typicals
- individual workspace: ~40 s.f. per employee (p/e)
  - typical office: 175 - 200 s.f. p/e
  - administrative space: 60 - 110 s.f. p/e
  - conference/classroom/break rooms: ~15 s.f. p/e

space planning/assumptions
- west side of basement level (est. 4,550 s.f.)
- west side and center area of first floor (est. 6,600 s.f.)
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space (quantity) | % | s.f. | notes/assumptions
--- | --- | --- | ---
individual studios (5-8) | 7.5% | 990 | 

--- | --- | --- | ---
group studios (5) | 20% | 2,640 | estimated 4 employees per studio

--- | --- | --- | ---
administrative area (1) | 2.5% | 330 | 1-2 admins

--- | --- | --- | ---
business resource area (1) | 6% | 792 | includes digital lab

--- | --- | --- | ---
resource library (1) | 5% | 660 | 

--- | --- | --- | ---
lecture/event (1) | 27% | 3600 | based on existing auditorium

--- | --- | --- | ---
kitchen (1) | 2% | 264 | 

--- | --- | --- | ---
lounge (1-2) | 2% | 264 | 1 larger, 1 smaller

--- | --- | --- | ---
conference/meeting areas (2) | 6% | 792 | 

--- | --- | --- | ---
workshop areas (2-3) | 18% | 2,376 | 

--- | --- | --- | ---
restrooms (2) | 3% | 396 | men's/women's; ADA compliant

--- | --- | --- | ---
storage (2) | .75% | 99 | 

--- | --- | --- | ---
mechanical/data (1) | .25% | 33 | existing + data closet
Patrick Henry Elementary School
Patrick Henry Elementary School is uniquely situated in the dual context of urban neighborhood and public urban park. A historic school recently closed by the City of Richmond, this unoccupied building consists of 40,000+ square feet divided among three main floors and two smaller split levels. Given its historic significance and extraordinary site surroundings, this space offers a prime opportunity for adaptive reuse, especially for the purpose of continued education and idea generation. The site’s proximity to precious urban green space is an opportunity not only to tie the built space to its natural surroundings, but also to visually reinforce the design center’s commitment to sustainable design.

Forest Hill Park, Patrick Henry Elementary’s virtual backyard, is directly accessible from the school grounds and offers 105 acres of opportunity for exploration, recreation, and discovery.

This neighborhood school was built in Richmond, Virginia in 1922 with the purpose of creating a sense of community among the neighborhoods surrounding Forest Hill Park. Situated adjacent to both the Woodland Heights and Forest Hill neighborhoods, it is within walking distance for many residents of the Richmond community. It is also within close proximity to the James River and just across the river from downtown Richmond.
rear elevation
faces northwest
receives minimal direct sunlight
symmetry
primary window rhythm: AABCBAAA

east elevation
faces northeast
receives direct sunlight in earlier hours of day
adjacent to parking lot, cul-de-sac

front elevation
faces southeast
receives direct sunlight throughout the day
symmetry
primary window rhythm: AABCDCCACCA

west elevation
faces southwest
receives direct sunlight in later hours of day
adjacent to school playground and black top court

two primary split levels
three primary levels
two primary entrances/stairs
front section
side section
rear elevation
front elevation
front section
side section
west elevation
east elevation
plan to section

symmetry/balance

geometry

natural light

structure

massing

circulation to use

primary use

secondary use

circulation

plan to section

parti

20

21
Case Study: Stretto House

project  residence in dallas, texas
architect  steven holl
concept  unique physical surroundings of home site translate into design concept extended throughout entire project

alignment of site with the qualities of a musical stretto guides design decisions and reinforces meaningful connections between the house and its landscape

stretto  a musical device in which one movement overlaps another, creating an intensifying tension
The site includes three ponds with existing concrete dams. Each pond contains small concrete walls over which water flows, resulting in the constant sound of overlapping water.

The house consists of a series of concrete “spatial dams” with metal framed “aqueous space” flowing through them. This arrangement mirrors Bela Bartok’s “Music for Strings, Percussion, and Celesta,” a stretto with four movements alternating with complementary qualities and divided among heavy (percussion) and light (strings). Similarly, the house is divided among four main sections, each with two modes: heavy orthogonal masonry and light curvilinear metal. (Holl Architects 7-9)
Water flows over the dams and symbolizes the overlapping of the stretto form. Overlapping also takes place in the interior space, where one floor seems to spill into the next.

“Where music has a materiality in instrumentation and sound this architecture attempts an analogue in light and space.”

A Paul Klee drawing offers conceptual support for the design. The Stretto House’s roofing system most notably aligns with the drawing which, like the house’s spatial dams, is divided into four parts (above).

An exploded axonometric drawing highlights aqueous space and spatial dams (below).

Water flows over the dams and symbolizes the overlapping of the stretto form. Overlapping also takes place in the interior space, where one floor seems to spill into the next.
Charlottesville, VA

Built in 1916, the former McGuffey Elementary School was adapted for reuse as an art center in 1975.

Cooperative non-profit

40 studio-renting members

Open to all areas of the arts

Building: Like Patrick Henry Elementary, this building is a brick, 3-story structure with central double-loaded corridors flanked by large, subdivided classroom spaces.
While the original McGuffey School building has not undergone major structural changes (barring the addition of an elevator), the art center redefines space as needed in an organic, temporal manner. Partition walls divide space and createalcoves throughout the space to provide the artists with the spaces and adjacencies they require. The linear and relatively open plan of the space allows for flexibility in artists’ studio configurations without the burden of excessive time or expense. Also, the wide, intact corridors serve as ideal gallery and display spaces.

similar
rectilinear plans
symmetry
double loaded corridor
central administrative ceiling heights site orientation

different
entries
ADA compliance
stair locations
surrounding site
cafeteria/auditorium
Case Study: Glasgow School of Art

located in Glasgow, Scotland
built 1896-9; 1905-9
masonry and steel construction

about
located in Glasgow, Scotland
built 1896-9; 1905-9
masonry and steel construction

architect
Charles Rennie Mackintosh
Overall symmetry

4 sets of windows on east side of front elevation balance out 3 sets on west side

Plan

Shallow “E” shape for first, second (principal) floors; rectilinear massing

Space planning

Services, circulation, administration, mechanical (public) spaces centrally located

Primary studio use spaces align with exterior walls for optimal natural light exposure; basement studios have natural light via skylights

Mezzanine levels allow for fit of smaller spaces without interruption of larger, continual spaces; allowable due to 26 foot ceiling heights on the first floor (Wilhilde 77)

In the case of the library, three levels incorporated into one floor for maximization of space usage and dramatic spatial effect

The basement and first floor plans demonstrate the central locations of public and utility areas and their alignment with primary corridor areas. The private spaces are generally located in corner, mezzanine, or central locations, avoiding major areas of circulation. This arrangement is consistent among all floors.
Case Study: NY Designs

About

opened in 2004, not-for-profit business center created to support promising NY design firms in growing into successful, vibrant businesses that contribute meaningfully to the economic and cultural growth of New York City.

Mission

to grow New York design firms

Origin

a program of CUNY Economic Development Corporation and Laguardia Community College/CUNY

Funding

$5 million from state; $1.2 million in federal funds; $150,000 for environmentally-conscious initiatives

Focus

product design, industrial design, fashion design, graphic design, interior design, architecture, lighting design, set design, jewelry and craft (artisans)

Services

design business courses, design skills courses, green design courses, business counseling, studio rental space, workshop rental space, digital lab

Leasing

3 year maximum

Images and site information courtesy of NY Designs, www.nydesigns.org
25,000 s.f. of tenant space:
- office suites
- studio rental space
- materials library
- conference rooms
- gallery
- photo shooting studio
- storage

10,000 s.f. workshop space:
- prototype workshop including a woodworking and metal shop,
laser cutter and rapid prototype machine
digital lab
mini-lab for scale model making and training

Approximately 50% of the total square footage is used
(excluding the workshop space), leaving room for growth and
an opportunity to evaluate the success of the relatively new
program prior to expansion.

Almost 60% of total usable space is dedicated to occupied or
available studio space.

With the exception of the studios, all spaces are shared
among the resident firms. The workshops, business
counseling, and classes are open to the public.

Public and private spaces are mixed: “the floor plan focuses
on integration, easing from the most public spaces to the
most private.” This configuration supports collaboration
among the resident firms, visitors/users of the center, and the
administrative staff.

The percentages above reflect the amount
of usable space dedicated to the specified
space function. These numbers are helpful
in understanding space requirements and
priorities in my similar program.
Case Study: Corrugated Box Building

**location**
Richmond, Virginia’s Old Manchester District

**about**
The “corrugated box building establishes a community of vibrant, creative businesses in an open, collaborative workspace”

Adaptive reuse of +/- 40,000 s.f. warehouse

**tenants**
Architecture
Strategic branding/graphic design
Product development/design
Photography
And growing
In this approach to an open, shared workspace, flexibility is the guiding design principle.

Locations of shared spaces, circulation paths, and enclosed spaces (private offices and conference rooms) allow for the open floor plan to maintain flexibility and connectedness among tenants. Every effort is made to maintain the openness of the environment to support and encourage collaboration and idea sharing among the tenants. Where closed spaces exist, glazed partition walls maintain a sense of openness.

Shared spaces are generally contiguous, with the service spaces pushed against the periphery of the floor. This arrangement allows for openness and connectivity among the tenant spaces themselves.

Primary circulation paths surround shared spaces, discouraging general circulation from occurring within the individual firm spaces while encouraging interaction between the firms in its central location. The circulation route also allows for logical wayfinding.

The use of heavy fabric drapery panels hung from a curvilinear track system guides wayfinding, delineates space, and provides visual and somewhat surprisingly, sound privacy. The panels also provide flexibility in privacy; tenants may choose to adjust them as necessary to establish their desired level of privacy.

Flexibility is evident within the tenant spaces as well. The custom systems furniture in the 3 North and Grace Street spaces allow for work stations to shift between shared and unshared configurations while privacy partitions can be used or removed at will.
Case Study: Pratt Design Incubator

location
brooklyn, ny

about
the pratt design incubator for sustainable innovation supports the entrepreneurial talents of designers, artists and architects selected from the Pratt community who share the common goal of linking the social entrepreneur with the business of design

a multi-disciplinary group of design, business and industry professionals in collaboration to support sustainable and socially responsible innovation
services
start-up support for pratt entrepreneurs
design consulting services on a project basis
workshop and seminar organization
mentorship network coordination
resource center for design entrepreneurs

how it works
each semester new proposals from graduating seniors, faculty, and alumni accepted
upon acceptance to the program, incubees receive office space, workshop facilities, and guidance from the growing network of mentors and advisors for up to two years
incubees build businesses around marketable design concepts from their design studies
at the end of a team’s term they become members of the mentorship network and may be considered for the ‘accelerator program,’ which extends their stay within the incubator while they pursue further financing
the director of the incubator outlines current initiatives and projects from the consultancy side and manages the progress of the incubator itself

teams
entrepreneurs
pratt alumni starting businesses
entrepreneurs receive a safe and stimulating place to launch businesses with office space, resources and support
helps take the mystery and overhead out of starting a business
co-operative environment enables quick solutions to problems that could otherwise take weeks to solve alone

consultants
teams assembled from the network of pratt talent for specific projects
the consultancy practice brings in engaging projects from outside clients
provides opportunities for incubees to take on projects that “might not be undertaken without a team of like-minded people using design as a vehicle for positive change”

services
start-up support for pratt entrepreneurs
design consulting services on a project basis
workshop and seminar organization
mentorship network coordination
resource center for design entrepreneurs
“The body is at the very essence of our being and our spacial perception... It is precisely at the level of spatial perception that the most powerful architectural meanings come to the fore.”
phenomena

events perceived through a person’s senses or with their mind

phenomenology

reflective study of the essence of consciousness as experienced from the first-person point of view

takes the intuitive experience of phenomena as its starting point and tries to extract from it the essential features of experiences and the essence of what we experience

experience as basis of opportunity waiting to be catalyzed by special concepts

physical experience of building materials and their sensory properties

highly personal and inward looking approach to design

“I depend entirely on concept diagrams, I consider them my secret weapon. They allow me to move afresh from one project to the next, from one site to the next.”
“From initial concept to finest detail, our aim is for idea and phenomena. An overall idea is like a chain of causes and effects working with functions and physical elements. Unlike a beginning in form, the concept transcends the abstract, organizing the experiential phenomena. The pleasure of architectural experiences—the phenomena of light and spacial sequence, textures, smells, and sounds—is irreducible and ultimately enmeshed with situation, season, and time of day.”
Case Study: John Hejduk

masque
form of festive courtly entertainment which flourished in sixteenth and early seventeenth century Europe; involved music and dancing, singing and acting, within an elaborate stage design in which the architectural framing and costumes might be designed by a renowned architect.

definition courtesy of www.wikipedia.org; image courtesy of john hejduk (mask of medusa)
I believe in books and the written word, therefore I fabricate works with the hope that they will be recorded in books.
“...for me work has always been additive. I take one project, use what I received from it and go on to the next – reject what I don’t want and then add... so each is a progressive condition of going from one thing to the next.”

thoughts

diagrams

poems

notes

painting

storytelling

imagination

models

structure

language

masques

“architecture as sanctuary, places of nurture for the arts, for rituals and religions, and for acts of living”
Case Study: Hannah Hinchman

Process about
- artist
- naturalist
- illustrative journalist
- writer
- teacher
Hinchman advocates journaling as a means of actively engaging with and exploring experiences rather than passively witnessing them. She combines her own keen observation with carefully chosen words, painting, drawing, and diagramming to uncover meaning in her experiences and natural surroundings.

In adapting techniques similar to Hinchman’s in the setting of Forest Hill Park, I hope to acquire a deeper understanding of Patrick Henry Elementary’s site and to discover building/site connections which will inform my design.

“The journal is a good place to play with words, sift through them till you get hold of the right ones. You are writing for yourself, for the pure pleasure of feeling the correspondence between words and experience. Look again, look harder and longer. Then deliberate, and listen carefully to the words you choose and the ways you combine them. Excise the meaningless and the habitual.”
I began my concept studies with on-site observation and analysis of the dramatic land formations and green space that surround Patrick Henry School.
The heart of Forest Hill Park is a marshy wetland at the bottom of a steeply sloping ravine. Reedy Creek enters the park from the topmost part of the ravine, meanders through its walls, pours into the wetland, and continues on to the James River.

Patrick Henry School is perched 180 feet above sea level on the crest of one side of the ravine, adjacent to the point where the creek enters the park. This building’s site defines an area of transition where relatively flat ground begins to steeply slope down to the center of the park, which rests at 80 feet above sea level.

Physical characteristics of the park landscape emanate from the central wetlands in a loosely concentric manner: a grass ring, a stone border, an asphalt path, another stone border, and continuous rings of trees expand outward and upward as they form the walls of the ravine. These elements lend a sense of preciousness and protection to their common center and reach out to establish connections with the surrounding areas.

The idea of growth from a center guides my design, serves as a metaphor for the design center program, and reinforces the connection between the Patrick Henry School building and its site surroundings.

Site studies uncovered organizational relationships of land forms and materials that provided opportunity to connect the building to its site surroundings through its interior design.

Concept statement

Concept models help explore ideas related to building, site, and program. The model below best captured my thoughts on interconnected growth from a center and provided the basis for a key design element in the design center.
Design: Translation and Realization
second floor
1. private studio
2. lounge/casual work space
3. administrative office
4. conference room
5. storage
6. ada restrooms
7. business resources
8. group studios
9. shared work/flexible space
10. lecture/event space
11. mechanical/storage
12. proposed fire stairs

first floor
1. primary entry (half floor below)
2. reception
3. coffee bar
4. employee kitchen
5. event kitchen
6. ada restrooms
7. business resource area
8. informal meeting space
9. classroom
10. digital work stations
11. design sample library
12. layout space
13. design library
14. storage

code details
- use group: b
- total programmed s.f.: 27,050
- total designed s.f.: 15,300
- occupancy load: 100
- means of egress: see ▲ in plans

# toilets: 7
# urinals: 2
# lavatories: 6
# water fountains: 2
Four individual wood structures formally connect in a manifestation of the design idea of centricity. Originating from the same center, the forms appear to unfurl in a manner that serves to connect the public design center (first floor) to the more private incubator and administrative spaces above (second floor) and also to organize, define, and condense space on both floors. The form, although geometric, conveys an organic sensibility which reinforces the connection between the built space and the profound growth that surrounds it in Forest Hill Park.

The dualism of connection and growth also supports the interdisciplinary approach of the design center program; while the design businesses grow individually, they still maintain a connection in their shared, collaborative work environment and in their design foundation.

A corridor with lowered 8’ ceilings connects the reception area to the primary space of the design center. Upon entering the design center, ceilings expand to 27’ in height, a significant height differentiation which emphasizes the openness of the connected first and second floors. While the first floor is designated for public use (design business center) and the second floor is designated for relatively private use (incubator businesses and design center administrators), the spaces are highly integrated both visually and spatially. This drawing illustrates the digital work stations, classroom, and informal meeting space on the first floor and the shared administrative office and balcony lounge space above (left to right).
This view from beneath the wood ceiling over the digital work stations reveals how the reception area physically connects to the design center’s business resource space. This open adjacency allows for visual monitoring from the reception area into the design center and also for the shared use of business resources between the receptionist and design center visitors.

The following spaces are also illustrated in this drawing: conference room (above, left), lounge/casual work balcony (above, center), shared studio (above, right), classroom (below, left), entry corridor (below, center), and design library (below, right). Behind the shelves in the library stands a wall with three built-in, lighted niches—incubators for reading.

Circulation on the mezzanine takes place around the perimeter of the space alongside the exterior walls of the building so that natural light and exterior views are largely unobstructed.

An exploded axonometric drawing highlights the layered geometry of the combined first and second floors of the design center.
Incubator group studios can accommodate up to four employees. Adjacent layout space, business resources, flexible space, and storage are shared along with the rest of the resources the design center offers. Wood structures come into play again in the studios and serve to simultaneously connect and separate them, as well as to formally connect this more private space to the semi-private and public spaces of the building shaped by similar structures.
A steel structure frames 2’ x 2’ resin panels that are easily inserted or removed and held into place with magnets. This system offers incubator businesses virtually endless options for creating identity for their individual spaces through panel selection and customization. Panel options vary in color and/or pattern, transparency, and content if digital imagery is incorporated. The studios may flexibly create areas with varying degrees of privacy and areas of openness, depending on their needs.

3/8” square magnets

up to 1/2” thick panels

This image from the thesis exhibition features key materials from the project. Each sample is attached to a steel sheet with magnets, reflecting material components of the group studios. Also included are the following material samples, right to left and top to bottom:

- fabric palette
- paint palette
- hardwood flooring - first floor
- wood finish sample - wood structures
- cork flooring - second floor
- 3form samples

The section-elevations below show a range of possibilities for achieving varying levels of visual privacy and visual identity in the group studios.
I believe that there is such a thing as a new idea.

I often hear that the opposite is true. I know I’ve said it many times, mostly when I’m frustrated with my creative process and find that my efforts to generate new ideas seem futile or my work seems unoriginal or boring. I then have to remind myself that ideas are complex and multi-layered and require study, persistence, and unraveling to allow for the birth of new ideas.

I think the difficulty in new idea generation is rooted in our associative cognition. For example, since I was a child, every car I see has a face. The shape, color, and arrangement of lights determine whether a car is a happy, nice car; an aloof, arrogant car; an angry, mean car; or perhaps a shy, worried car. Some cars even take on nonhuman faces, like the Mustang, which to me looks like a hungry shark. It’s all in the “eyes” and “nose” of the car. It takes a concentrated effort for me to look at a car and see it without a face or a disposition—to see it for what it really is. This is a human tendency; we see an object and immediately think of other objects that are like it. To a certain extent, we can become trapped in what we know.

I believe a designer’s best opportunity for generating new ideas is to question and perhaps resist intuitive associations and strive for abstracted associations… for the unraveling and re-raveling of ideas with unobvious connections to yield new ones. Architect Steven Holl is a master of extracting “new” ideas from existing, not overtly related concepts. His fascinations with science and phenomenology, for example, help him to explore ideas such as porosity, parallax, and strange attractors in the new context of architecture/design and to uncover new connections and insights which inform his conceptual approach to architectural projects. The final manifestations of his conceptual explorations—the built spaces—are unquestionably rich with meaning and beg for examination and human interaction. Many of his spaces provide other-worldly, highly spiritual experiences for users and serve as a testament to the emotional and humanistic value of his thinking. Holl’s new ideas contribute profoundly to the human experience.

Our greatest responsibility and challenge as designers is to continue to seek new ideas, new solutions, and new associations. To resign to believing new ideas are not possible is to give up hope for a better human experience and for an improved future. Fortunately, the pursuit of design will not allow for this. Design is hope.

works cited


