

ARCHITECTURE DESIGN THEORY

PART 4: ORGANIZATION

© JT Wunderlich PhD 2019

http://users.etown.edu/w/wunderjt/

ARCHITECTURE DESIGN THEORY



LECTURE SERIES

PART 1 PRIMARY ELEMENTS

PART 2 FORM

PART 3 FORM & SPACE

PART 4 ORGANIZATION (This Lecture)

PART 5 CIRCULATION

PART 6 PROPORTION & SCALE

PART 7 PRINCIPLES

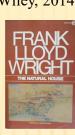
PPTX MP4 YouTube PDF

SOURCES

* Personal Architecture projects, frequent international travel, BS Architectural Engineering (U.Texas 84), plus 1-1/2 years of Urban Design (UCSD 1986-87)

COURSE TEXTBOOKS

- [1] Ching, Francis D.K. Architecture: Form, Space, and Order. 4 ed., Wiley, 2014.
- [2] Wright, Frank Lloyd. The Natural House. Bramhall House; 1954.

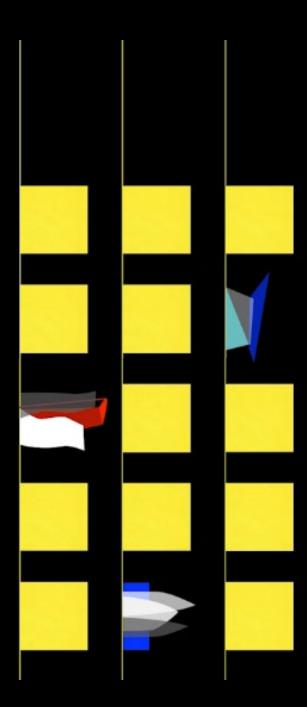




OTHER SOURCES

- [3] Storrer, William A. The Architecture of Frank Lloyd Wright, Complete Catalog. 4TH ed. U. of Chicago Press, 2017.
- [4] Bacon, Edmond. Design of Cities. Thames & Hudson Ltd, 1978.
- [5] Lynch, Kevin. *The Image of The City.* MIT Press, 1960.
- [6] Wright, Frank Lloyd. *Testament*. New York, Bramhall House, 1957.
- [7] Froebel; Brief History of the Kindergarten. Froebel Gifts, 2013.
 - http://www.froebelgifts.com/history.htm
- [8] *PENN Rare Book and Manuscript: Frank Lloyd Wright's Paternal Family.* Penn Library. University of Pennsylvania, Feb. 20, 2014. http://www.library.upenn.edu/rbm/featured/mscoll822.html
- [9] Huxtable, Ada Louise. *Frank Lloyd Wright*. New York Times, Oct. 31, 2004. https://www.nytimes.com/2004/10/31/books/chapters/frank-lloyd-wright.html
- [10] Burns, Ken, and Novick, Lynn. Frank Lloyd Wright: A Film by Ken Burns and Lynn Novick DVD. PBS Home Video, August 28, 2001.
- [11] Wright, Frank Lloyd. *The Art and Craft of the Machine*, Vol. 8, No. 2 pp. 77-81, 83-85, 87-90, May, 1901. https://www.jstor.org/stable/pdf/25505640.pdf
- [12] Wright, Frank Lloyd. In the Cause of Architecture. Architectural Record, vol. XXIII, March 1908.
- [13] Wright, Frank Lloyd. In the Cause of Architecture; Second Paper. Architectural Record, May 1914.

Perception of irregularities relies on what we assume is regular and normal [1]







However some Japanese also "stand out" in Japan

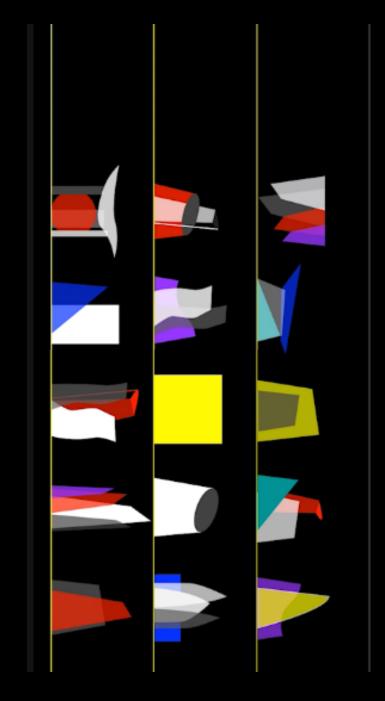


Kyoto Japan 2013





BEING UNUSUAL
can become
the new
normal, with
everything
INTENTIONALLY
DIFFERENT







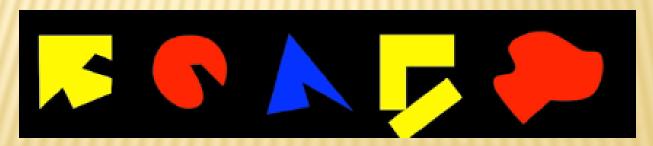


REGULAR & IRREGULAR FORMS

"Regular forms have parts related in a consistent and orderly manner - stable and symmetrical about one or more Axis

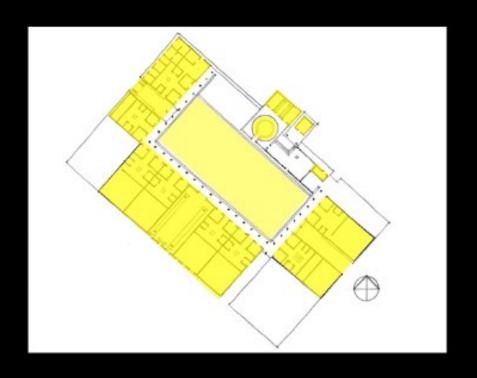


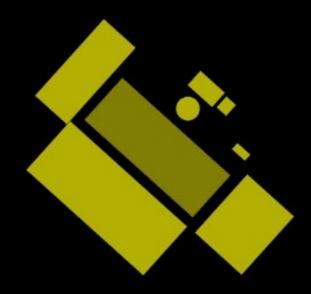
"Irregular forms have dissimilar parts related in an inconsistent manner – they're generally asymmetrical and more dynamic" [1]





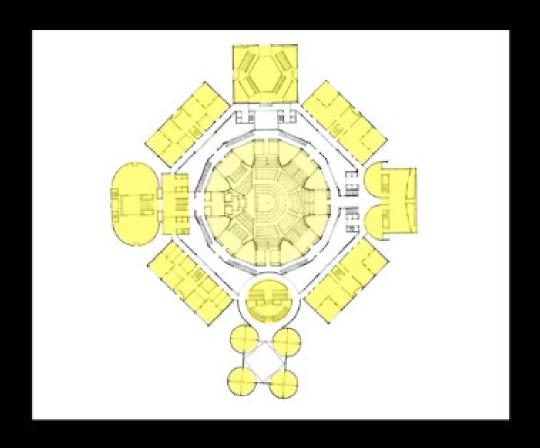
Secondary spaces may be equivalent in function, form, and size; And create a regular or symmetrical composition [1]

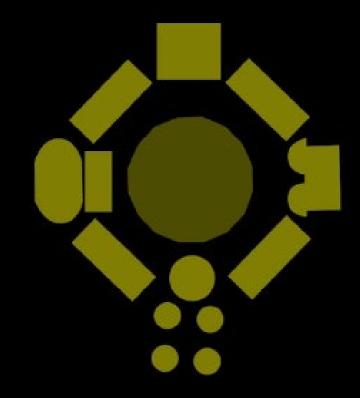






Secondary spaces may differ in form or size to respond to function, express importance, or acknowledge surroundings [1]







ORGANIZATION of FORMS and SPACES

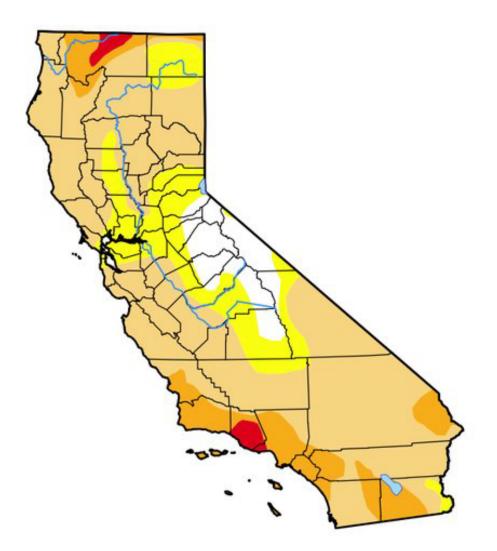
- A) in Urban Design
- B) in Architecture

ORGANIZATION of FORMS and SPACES

A) in Urban Design

Organization of Water Supplies

U.S. Drought Monitor
California



January 8, 2019

(Released Thursday, Jan. 10, 2019) Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	7.77	92.23	75.17	14.12	1.55	0.00
Last Week 01-01-2019	7.77	92.23	75.17	14.12	2.10	0.00
3 Months Ago 10-09-2018	15.16	84.84	47.94	22.77	4.87	0.00
Start of Calendar Year 01-01-2019	7.77	92.23	75.17	14.12	2.10	0.00
Start of Water Year 09-25-2018	12.18	87.82	47.97	22.82	4.94	0.00
One Year Ago 01-09-2018	53.58	46.42	12.69	0.00	0.00	0.00

Intensity:

D0 Abnormally Dry
D1 Moderate Drought
D2 Severe Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:

Brad Pugh CPC/NOAA



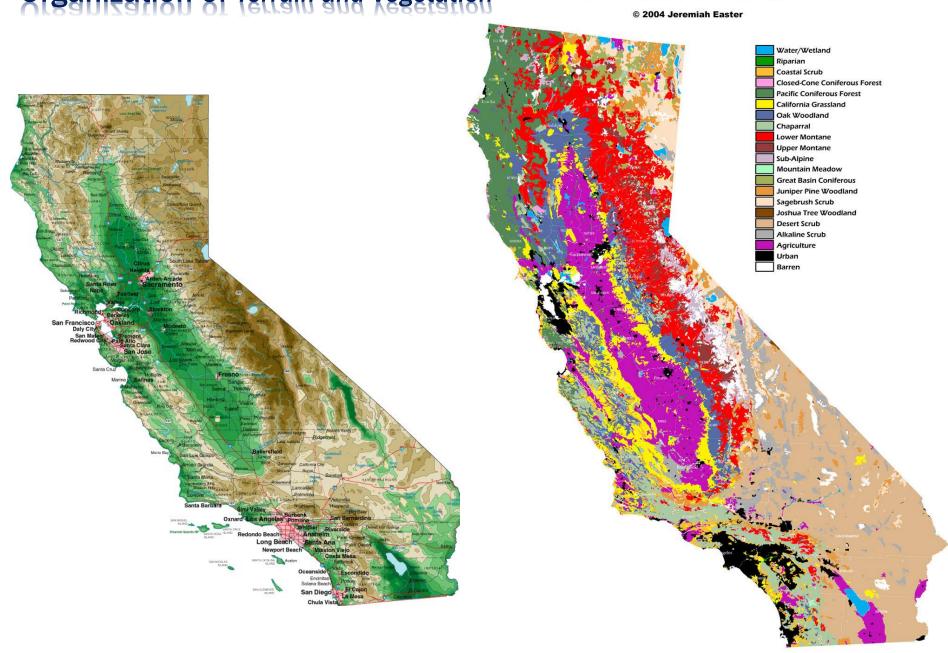




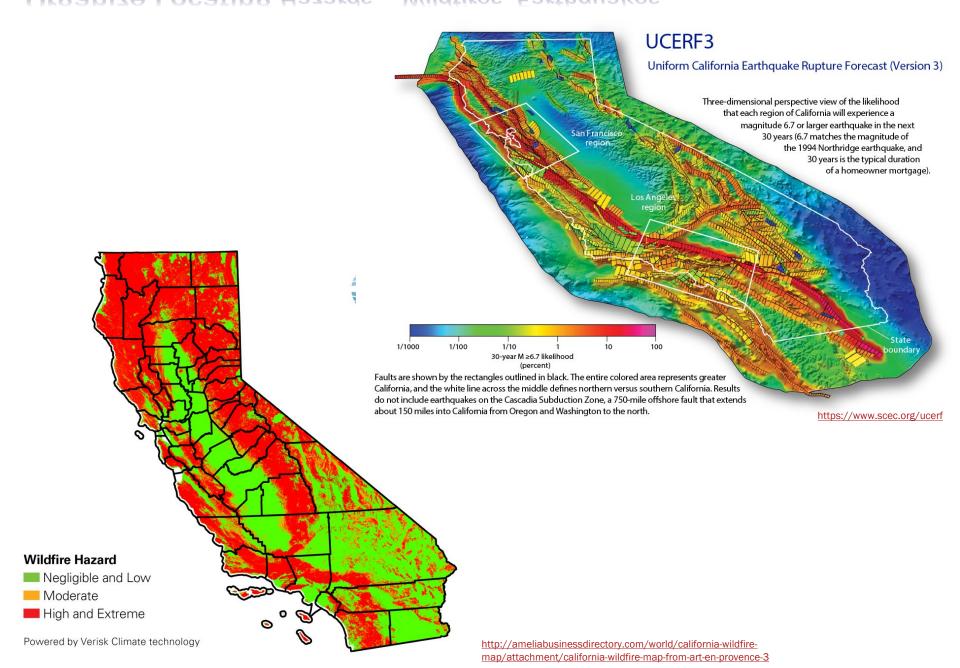


California Vegetation/Wildlife Habitat Regions

Organization of Terrain and Vegetation



Organize Locating Hazards - Wildfires, Earthquakes



CLUSTERED FORMS

"Clustered forms organize to size, shape, or proximity;

And can incorporate forms of various shapes, sizes, and orientations...

Cluster housing in vernacular architecture of various cultures...

Individuality and diversity of houses is maintained as part of an ordered whole" [1]





"Individuality and diversity of houses is maintained as part of an ordered whole" [1]





2017 Europe 11, Venice Near Fish Market

13 views • Jun 27, 2017



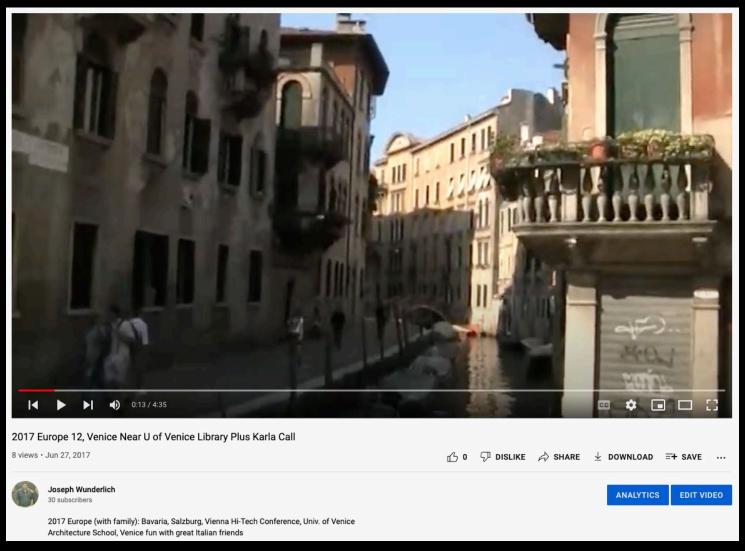
Joseph Wunderlich 30 subscribers

ANALYTICS

EDIT VIDEO

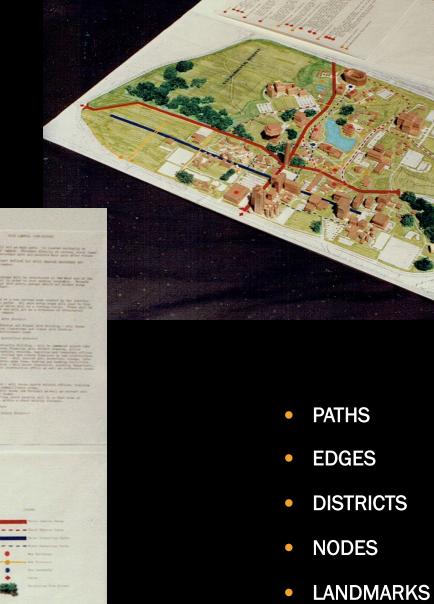
"Individuality and diversity of houses is maintained as part of an ordered whole" [1]





UCSD Campus Master Plan by JT Wunderlich 1987

UCSD USP174 Urban Design Project



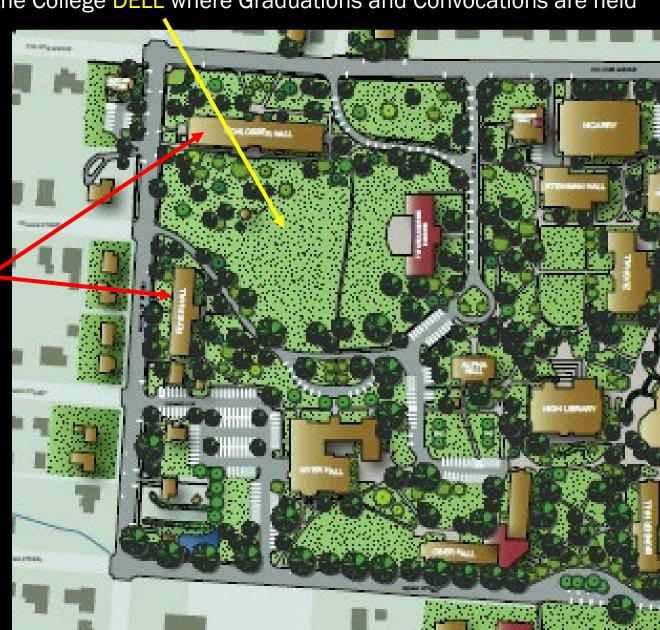
URBAN DESIGN

2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held



2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held

Including demolishing these two existing dorms, and then building three new dorms around the DELL



2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held

PRESERVATION is a high priority, including old-growth trees



2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held

PRESERVATION is a high priority, including old-growth trees



2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held

PRESERVATION is a high priority, including old-growth trees



2019 photo by Google

2019 frequent talks with Developers, Architects, and Engineers about new dorms around the College DELL where Graduations and Convocations are held

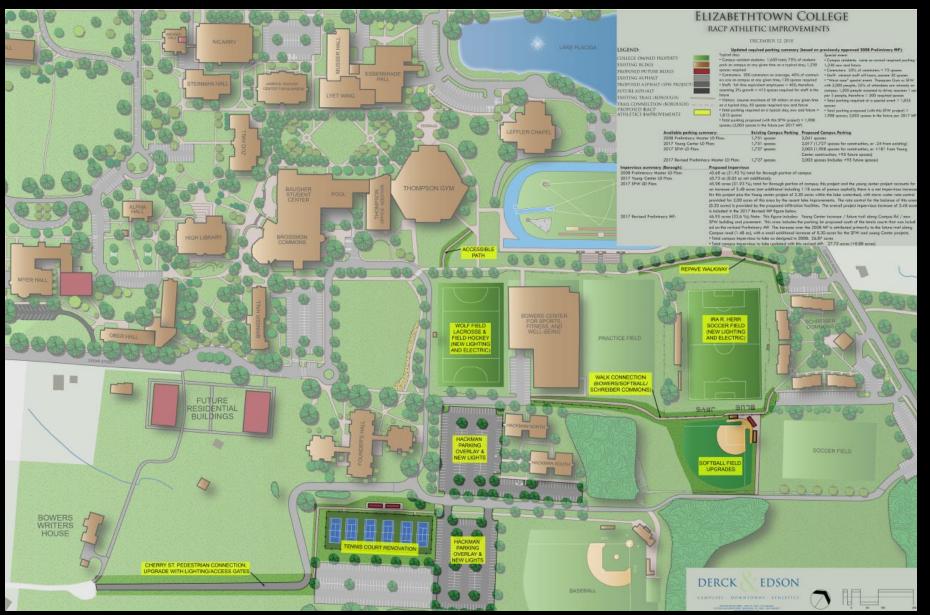
PRESERVATION is a high priority, including old-growth trees





The 2019 \$40M P3 development of new dorms around the DELL was postponed indefinitely due to covid and other priorities

\$1M RACP Grant to Elizabethtown College with help from Architecture Students to raise matching \$1M required by Grant



\$1M RACP Grant to Elizabethtown College with help from Architecture Students to raise matching \$1M required by Grant



\$1M RACP Grant to Elizabethtown College with help from Architecture Students to raise matching \$1M required by Grant



\$1M RACP Grant

With help from 2019 Architecture Students to raise matching \$1M

Your assignment is to create the following:

- A) 3D Revit renderings of highlights of softball field upgrades.
 (EXTRA: all of these improvements, and the entire field and surroundings fully rendered in 3D, in Revit)
- B) 3D Revit renderings of new lighting for Wolf Field for lacrosse & field hockey and Herr Field for soccer, per existing new specifications. (EXTRA: details of field markings, bleachers, and surroundings fully rendered in 3D, in Revit)
- C) 3D Revit renderings of highlights of new tennis courts and bleachers
 (EXTRA: all of these improvements and the courts, fencing, and surroundings fully rendered in 3D, in Revit)



2011 update to 1999 Master Plan by Derck & Edson:



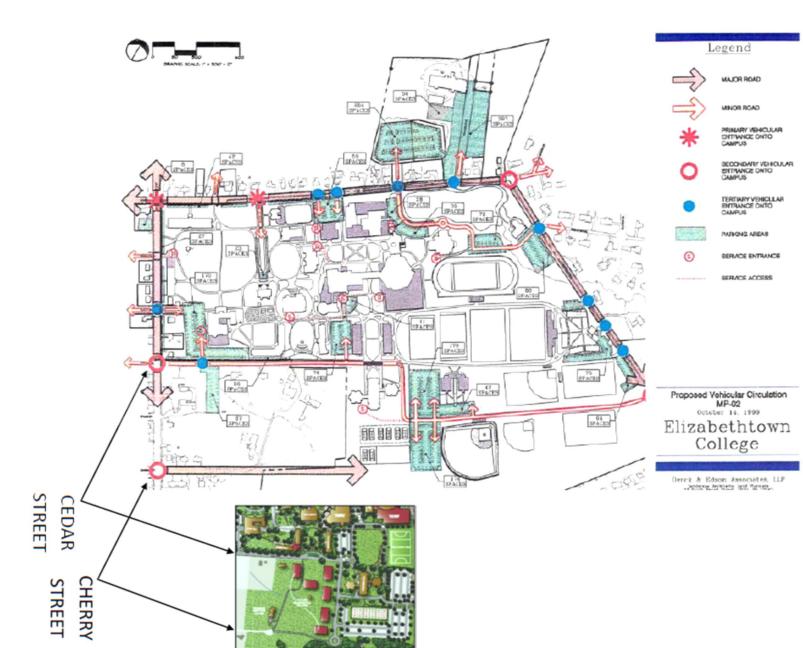
Six Derck & Edson proposed buildings are not fixed (i.e., Student designs likely completely different)

Student housing for Cedar Hill including an activity center for musical performances, art exhibitions, and a Café

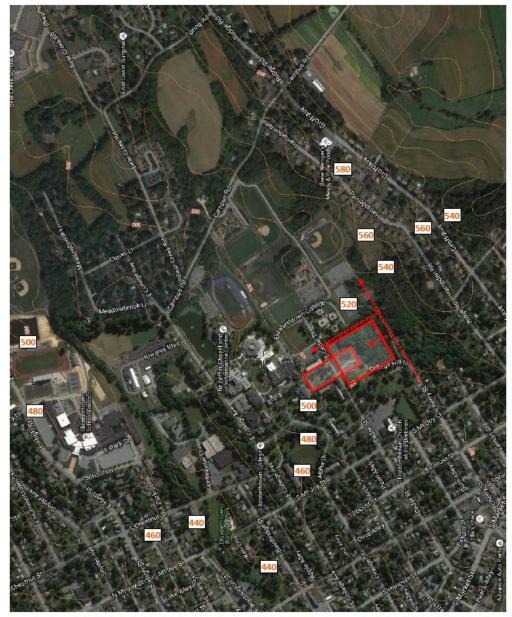
Also a new quadrangle that extends to the library

- Design on the Elizabethtown College Cedar Hill site, housing for approximately 100 students in apartment/townhouse style units designed for 4 students, each containing a kitchen, laundry, two bathrooms, and a living room. Units should be grouped into a cluster of buildings, with preferably staggered connectivity between units. The 2011 concept drawing by Derck & Edson above, with six separate buildings, is not fixed in either the number of buildings, or their orientations.
- * It is optional whether or not you wish to end Cedar Street before your new Quadrangle that you will design from the library to your housing cluster, and to create a new main entrance to the College on Cherry Street leading to the center of campus as shown. But never-the-less design a new Quadrangle from your new housing, down to the library.
- You are certainly allowed to move as much dirt as you wish (i.e., in the cut & fill "grading" of your site), including possibly making a continuous, or stepped, change in elevation from the elevation line at 520' located at the Cherry Street extension side of your site, down to the 500' elevation at the library.
- Provide one parking space on site for every 4 students.
- * This development should be consistent with the <u>Elizabethtown Borough Regional Plan</u> and the <u>Elizabethtown College Master Plan</u> including
 - + the 1999 Master Plan (Chapter1)
 - + the seven 1999 Site Analysis Maps
 - + the 2011 Plan Update
 - the 1999 Proposal to move the main entry from Cedar Street to Cherry Street.

PROPOSED MOVING OF MAIN ENTRY on CEDAR STREET to CHERRY STREET 1999 Elizabethtown College Master Plan



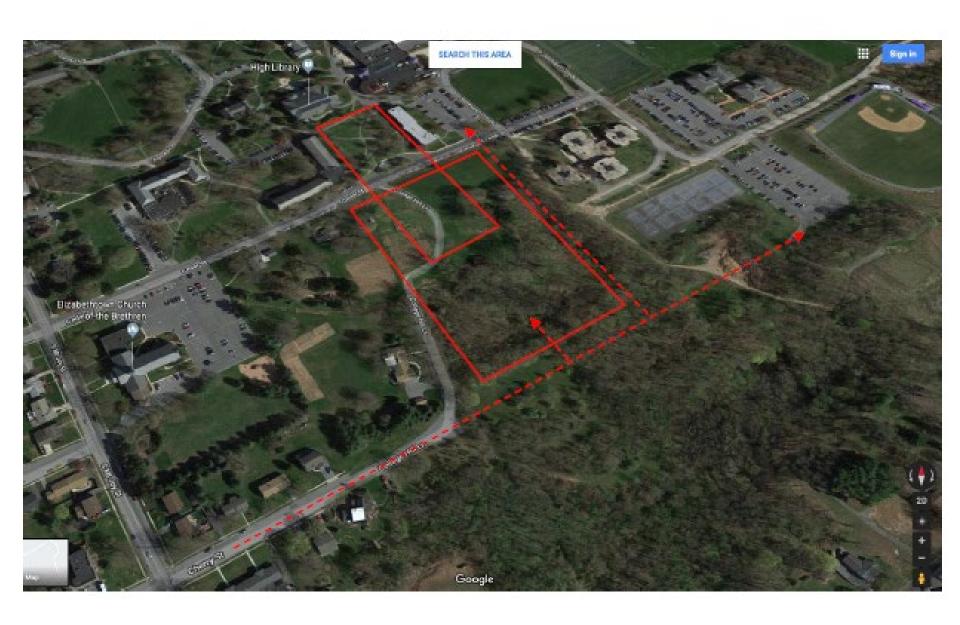




NORTH CEDAR HILL HOUSING



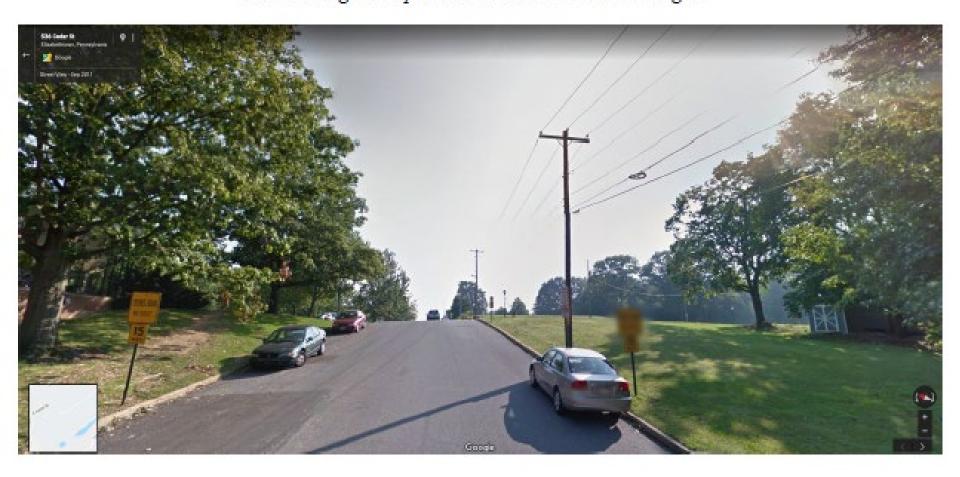
2019 Semester Project





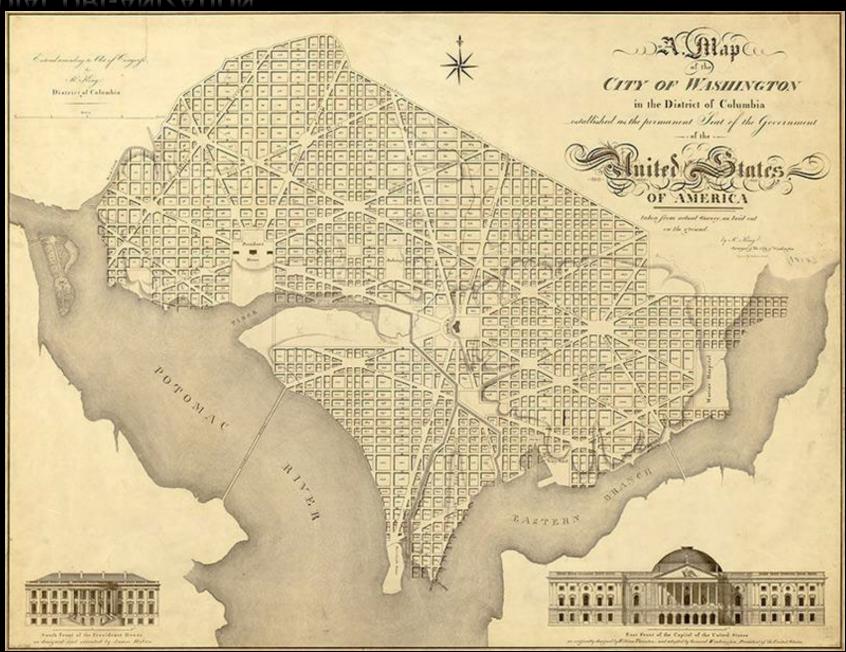


View driving East up Cedar Street with site on the right:









CLUSTERED ORGANIZATION

"...can organize forms that are generally equivalent in size, shape, and function into a coherent, non-hierarchical organization" [1]





JT Wunderlich 1984,85 Project Manager / Designer West Lake Oaks (13 buildings), Austin TX

JT Wunderlich 1984,85 Project Manager / Designer Austin TX

- Architecture and Engineering
- Interior Architecture
- Managed 60 contracts and several employees









Two IBM360
Computer Centers

2018 Photo



CLUSTERED ORGANIZATION

URBAN DESIGN (and Architecture)

1986/87 J Wunderlich, Director of Projects
"Cornerstone" High-tech office complex
San Diego CA
JDC inc (Development Company)







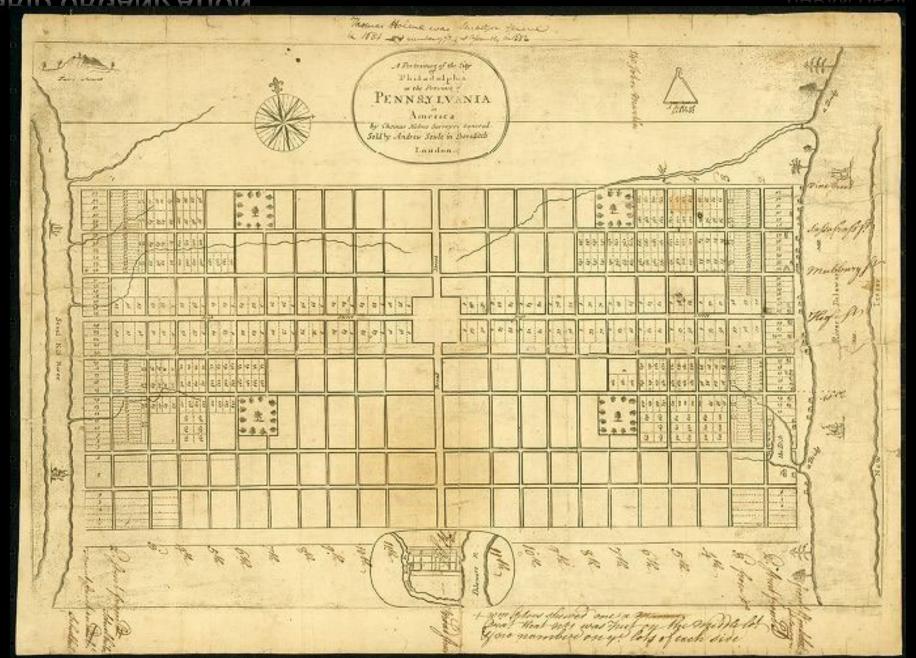
66,000sf hi-tech office & manufacturing for "Xscribe" inc 44,00sf "spec" (speculative) office building

- Led Architectural Design Team
- Added significant Architectural Design
- Project nominated for annual San Diego "Orchid Award"

CLUSTERED ORGANIZATION







"Entering an urban sector involves penetrating a vertical plane that distinguishes one space from another" [1]













ENTRANCE

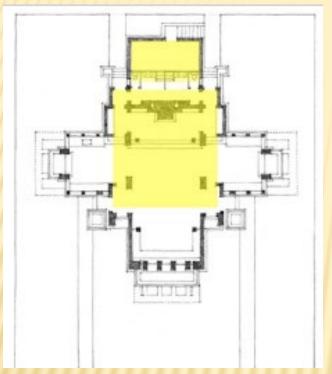


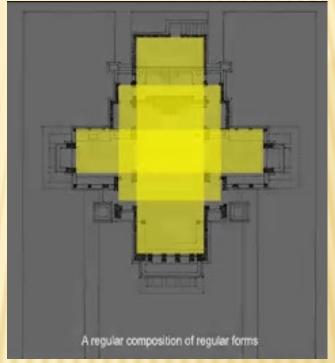
ORGANIZATION of FORMS and SPACES

B) in Architecture



A regular COMPOSITION of regular FORMS"

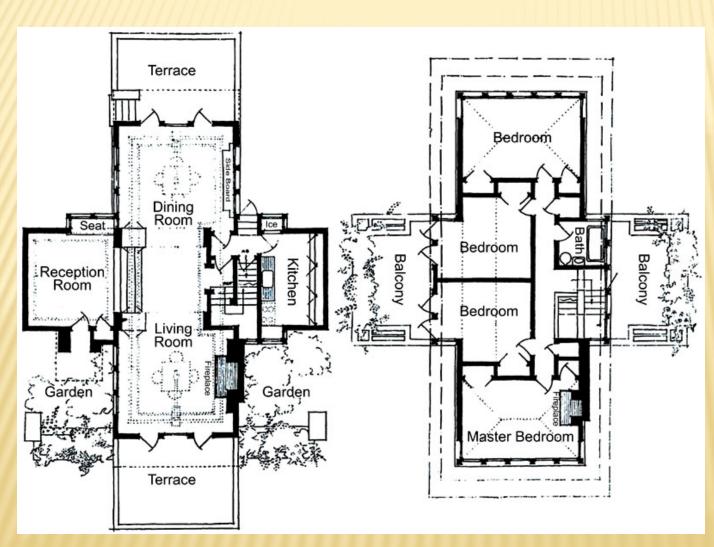




Coonley Playhouse, Riverside IL. 1912 by Frank Lloyd Wright"

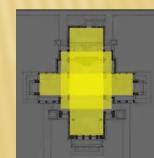


"Pin-wheeled Planes CRUCIFORM" [3]



Frank Lloyd Wright 1867-1958

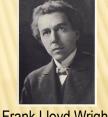




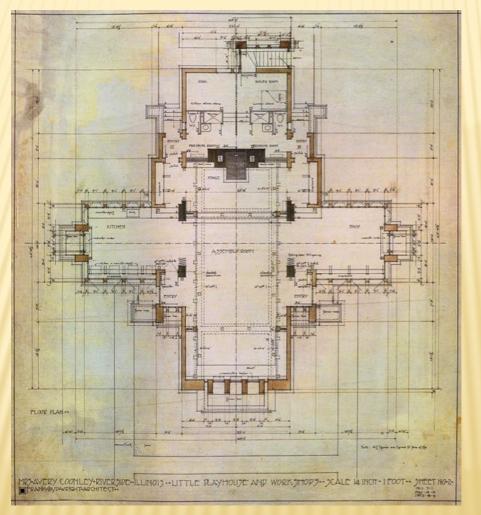
Prairie-style CRUCIFORM pinwheeled-plane type floor plan http://www.steinerag.com/flw/Artifact%20Pages/PhRtS142.htm

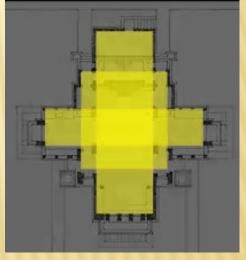
A regular COMPOSITION of regular FORMS

The CRUCIFORM, Pin-wheeled Planes of Frank Lloyd Wright



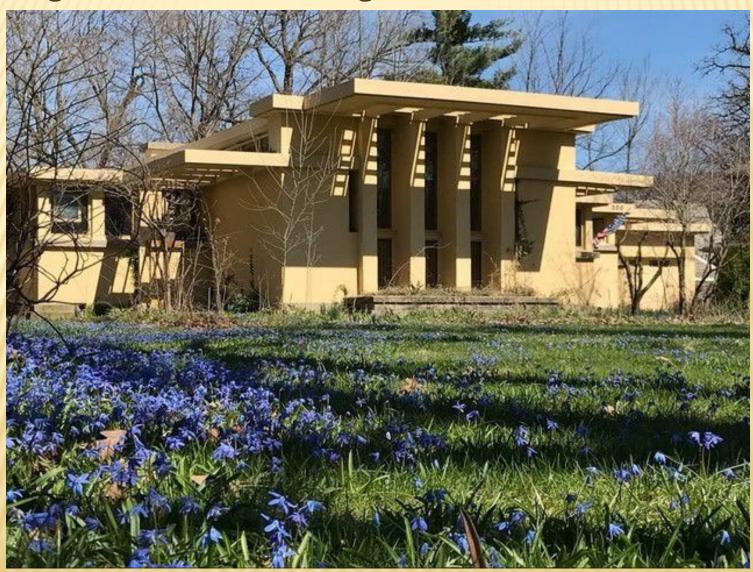
Frank Lloyd Wright 1867-1958

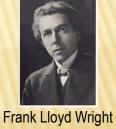




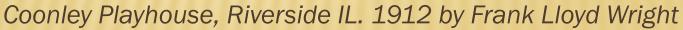
Coonley Playhouse, Riverside IL. 1912 by Frank Lloyd Wright

A regular COMPOSITION of regular FORMS





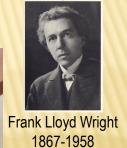
1867-1958





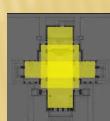
A regular COMPOSITION of regular FORMS





Coonley Playhouse, Riverside IL. 1912 by Frank Lloyd Wright

https://www.secondshelters.com/2018/07/05/frank-lloyd-wrights-coonley-house-an-architect-a-woman-a-school-your-home/

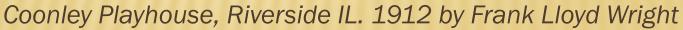


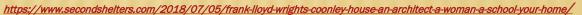
A regular COMPOSITION of regular FORMS

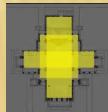




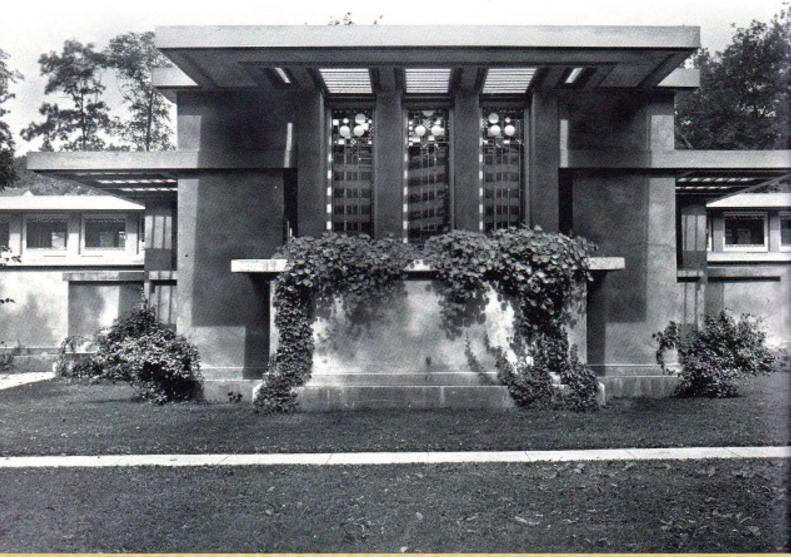
Frank Lloyd Wright 1867-1958







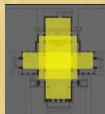
A regular COMPOSITION of regular FORMS



Frank Lloyd Wright

1867-1958

Coonley Playhouse, Riverside IL. 1912 by Frank Lloyd Wright

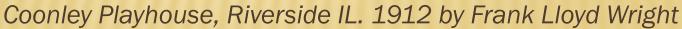


A regular COMPOSITION of regular FORMS

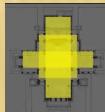


Frank Lloyd Wright

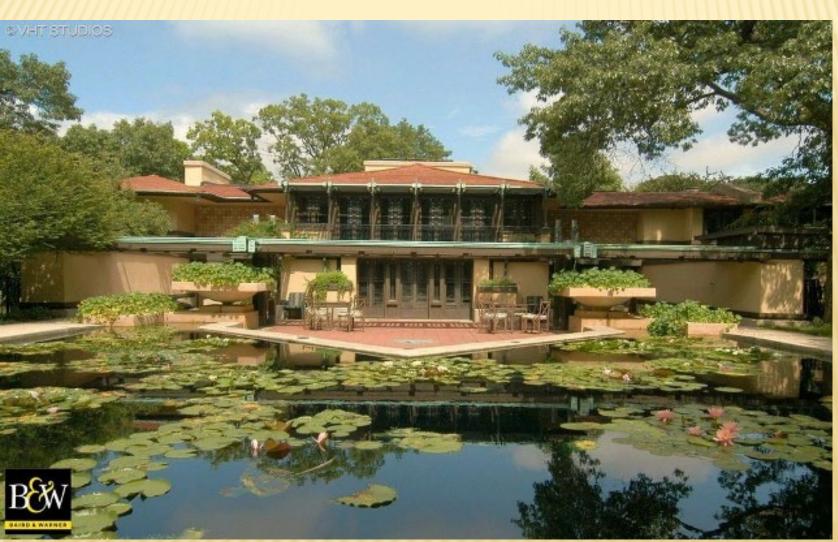
1867-1958

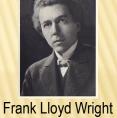


https://www.secondshelters.com/2018/07/05/frank-lloyd-wrights-coonley-house-an-architect-a-woman-a-school-your-home/



A regular COMPOSITION of regular FORMS



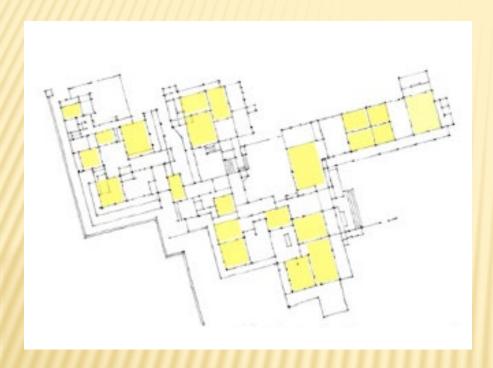


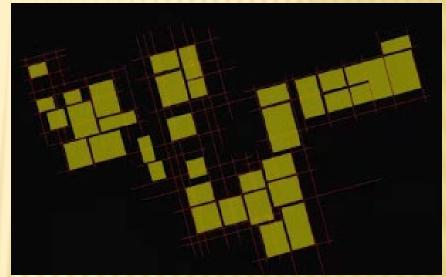
1867-1958



Coonley Playhouse, Riverside IL. 1912 by Frank Lloyd Wright

"A regular COMPOSITION of regular FORMS" [1]

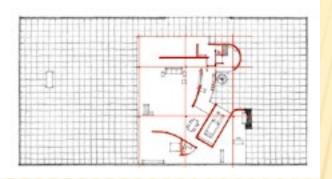


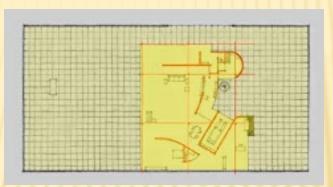






"A regular FIELD with irregular FORMS within" [1]

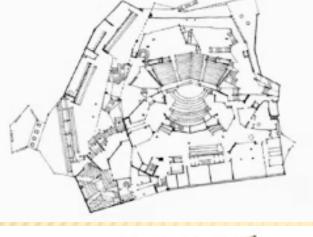


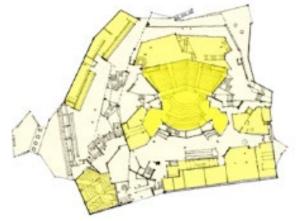












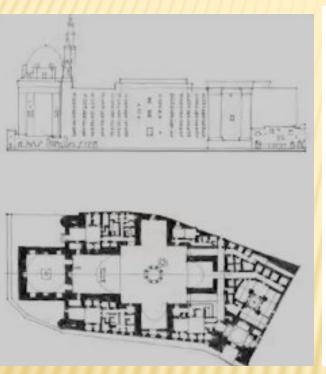


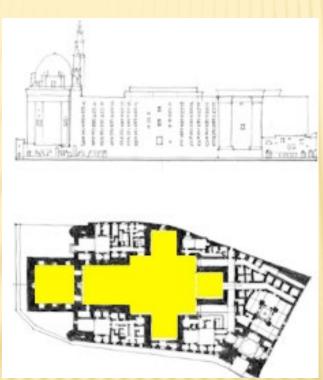
"an irregular COMPOSITION of irregular FORMS" [1]

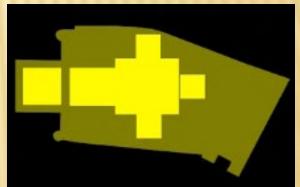




"An irregular COMPOSITION with regular FORMS within" [1]



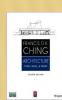






Adjacency allows each space to be clearly defined and respond to specific functional or symbolic requirements

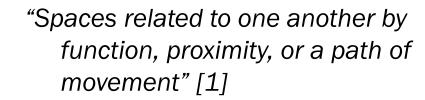
...The degree of visual and spatial continuity between adjacent spaces depends on the nature of the plane that both separates and binds them [1]

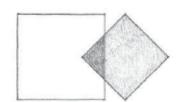




Space within a Space

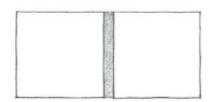
A space may be contained within the volume of a larger space.





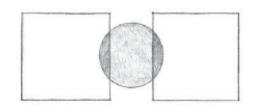
Interlocking Spaces

The field of a space may overlap the volume of another space.



Adjacent Spaces

Two spaces may abut each other or share a common border.



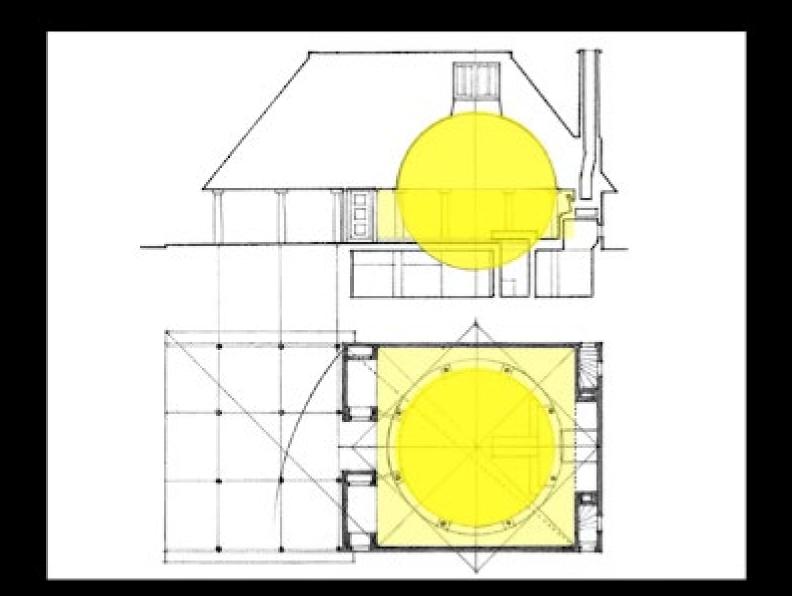
Spaces Linked by a Common Space

Two spaces may rely on an intermediary space for their relationship.



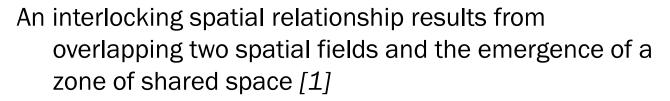
SPACE WITHIN A SPACE ARCHITECTURE

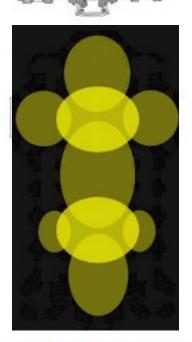
A large space can envelop a smaller space that depends on the larger, enveloping space for its relationship to the exterior environment [1]





INTERLOCKING SPACES



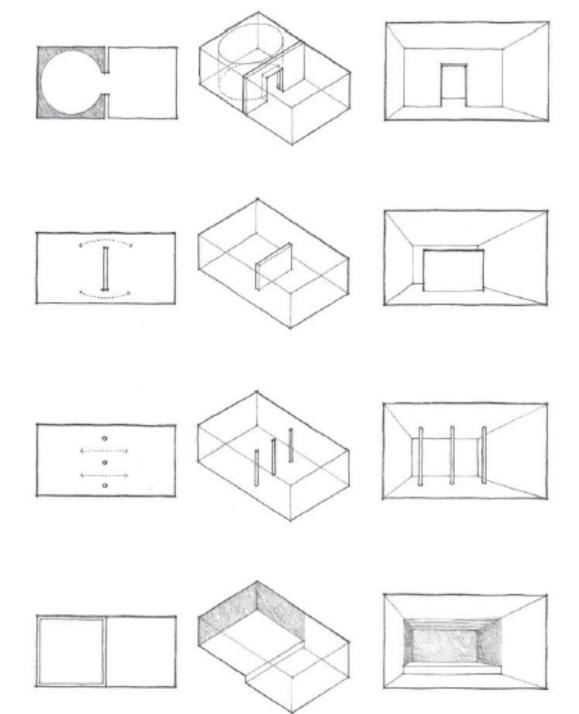




Pilgrimage Church, Vierzehnheiligen, Germany, 1744–1772, Balthasar Neumann

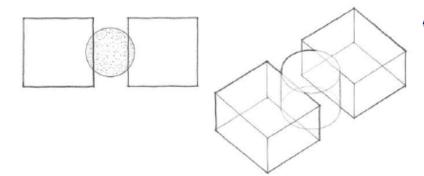


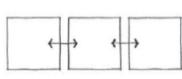
ADJACENT SPACES

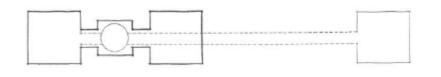


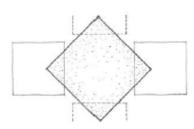


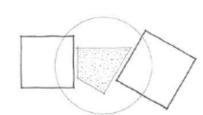
SPACES LINKED BY A COMMON SPACE







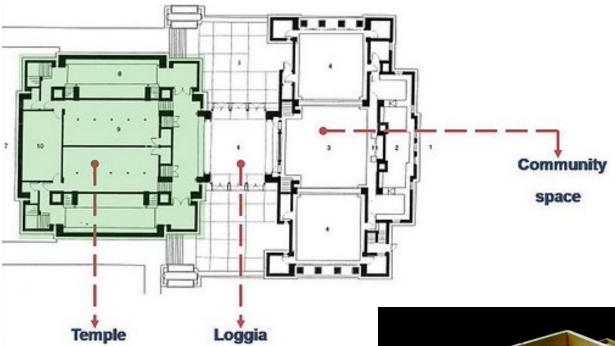






SPACES LINKED BY A COMMON SPACE

ARCHITECTURE





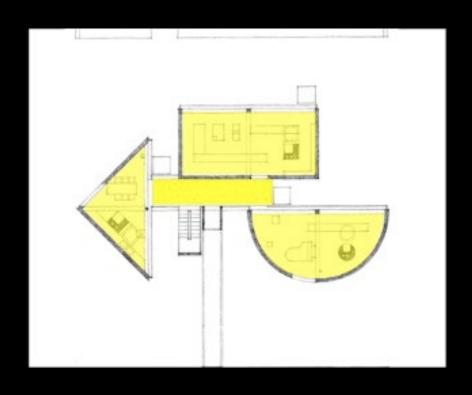
Frank Lloyd Wright 1867-1958

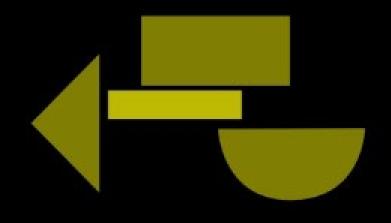
Unity Temple in Oak Park, 1905 Frank Lloyd Wright

http://lloydandalex.blogspot.com/2014/10/usa-31-frank-lloyd-wright-unity-temple.html



Intermediate space can link spaces distant from each other [1]



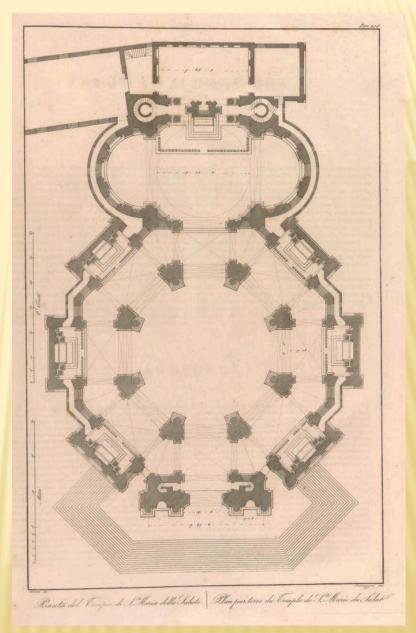


ARCHITECTURE

CENTRALIZED FORM

Centralized forms are ideal for freestanding structures, dominating a point in space, or occupying the center of a defined field.

They can embody secret or honorific places, or commemorate significant persons or events [1]



St. Maria Della Salute, Venice, Italy, 1631-1682



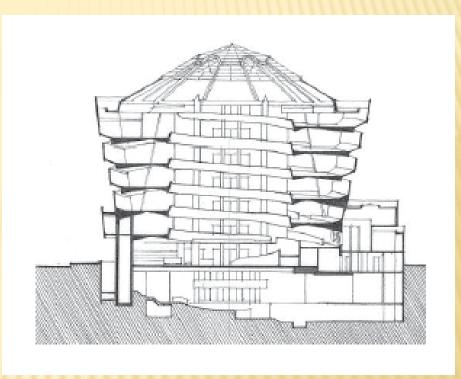


CENTRALIZED FORM and ORGANIZATION

A centralized organization has secondary spaces grouped around a dominant, central space

... The central organizing space may be an interior or exterior space [1]



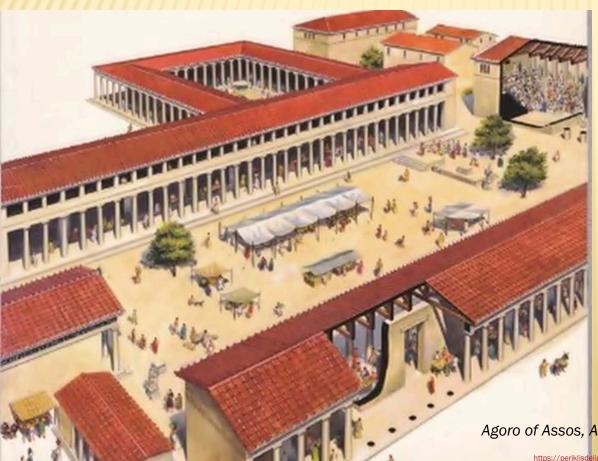


Guggenheim Museum, New York City, 1959 Frank Lloyd Wright



LINEAR FORM and ORGANIZATION

A linear form can organize secondary forms, and expresses a perception of movement [1]



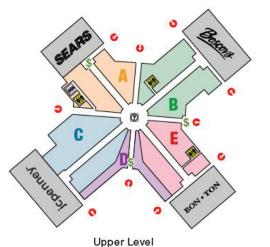


RADIAL FORM and ORGANIZATION

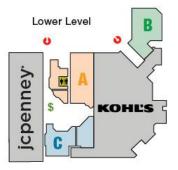
ARCHITECTURE

Radial forms have a *central core that is either a symbolic or functional* center of organization [1]

Park City Mall, Lancaster PA





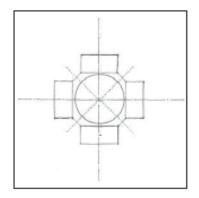


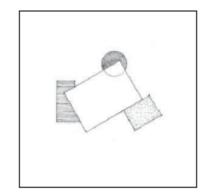


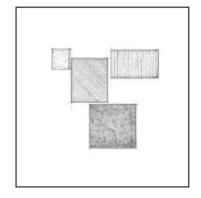


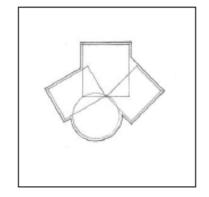
ARCHITECTURE

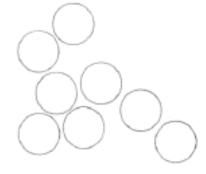
CLUSTERED FORM

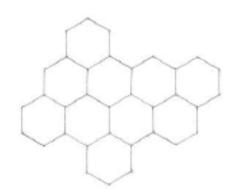


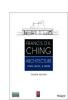






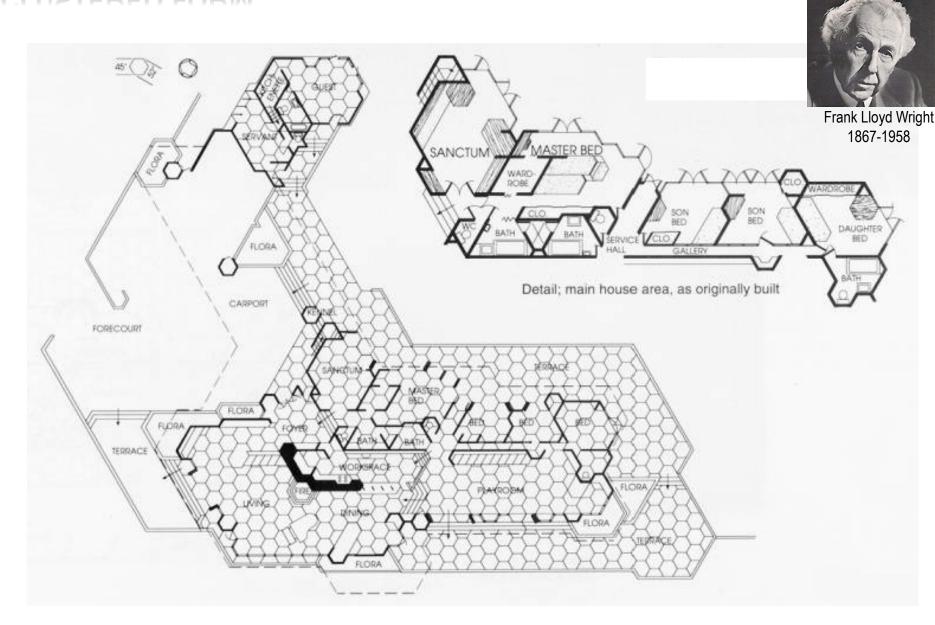






CLUSTERED FORM





Hanna-Honeycomb House, Stanford California, 1937 Frank Lloyd Wright

http://wright-up.blogspot.com/2013/11/the-paul-and-jean-hanna-house-stanford.html

CLUSTERED FORM and ORGANIZATION



Habitat Montreal, 1967 Moshe Safdle



CLUSTERED FORM and ORGANIZATION

A clustered organization relies on physical proximity to relate spaces

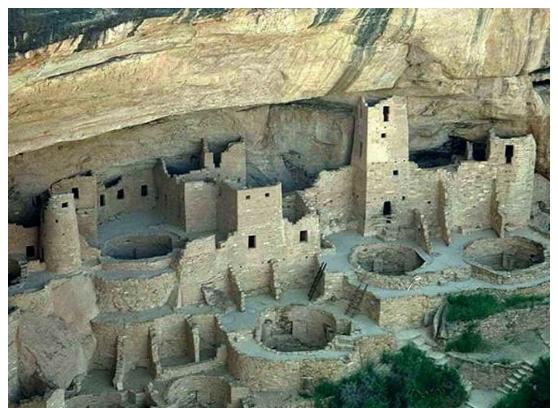
... and often has repetitive, cellular spaces with similar functions, and/or share a common shape or orientation.

... A clustered organization can also accept spaces that are dissimilar in size, form, and function, but relate by proximity or an ordering device such as symmetry or an axis." [1]



"The Anasazi civilization, 1500 BC, Chaco Canyon, New Mexico"

http://www.ancientpages.com/2016/12/03/ana sazi-sophisticated-civilization-disappeared-evolvedamerican-indians-southwest/



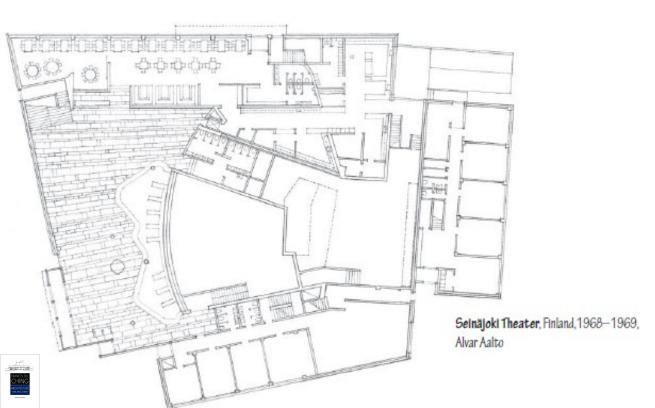
GRID FORM and ORGANIZATION

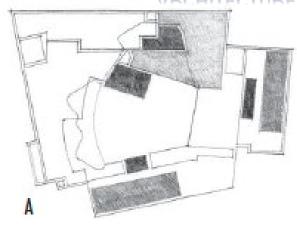
The *grid pattern* has repetitive modular units of space, with each as an isolated "event" or as repetitions [1]

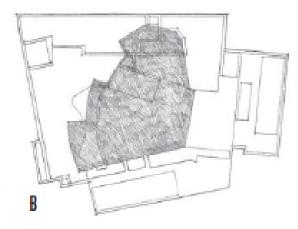


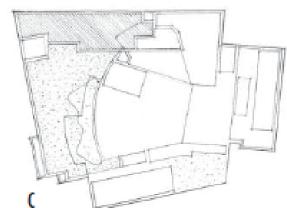


- A. Some spaces, such as offices, have specific but similar functions and can be grouped into single, linear, or clustered forms.
- B. Some spaces, such as concert halls, have specific functional and technical requirements, and require specific forms that will affect the forms of the spaces around them.
- C. Some spaces, such as lobbles, are flexible in nature and can therefore be freely defined by the spaces or grouping of spaces around them.



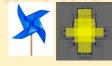






ORGANIC ARCHITECTURE DESIGN

CONFORM TO SITE, sun, topography, environment PINWHEELED PLANES -- CRUCIFORM



- PRAIRIE-SCHOOL, BROAD CENTRAL CHIMNEY, LONG CANTILEVERS (overhangs & balconies)

FOLDED PLANE like origami ...continuity...walls, ceilings, and floors become one

SIMPLE GEOMETRIES

HUMAN SCALE

OPEN FLOOR PLAN





UNITARIAN MOTHER Teacher



Frank Lloyd Wright

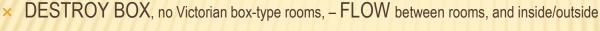
Japanese Buddhism & Shintoism, with some roots in Chinese Philosophy











- Walls become screens, BANDS of WINDOWS, FRAME VIEWS like ENGAWA
- Use MATERIALS IN NATURAL STATE -- same on exterior and interior

FORM and FUNCTON are one! Harmony, not one following other, secondarily

A UNIFIED WHOLE - inside and out - ORCHESTRATE SUN

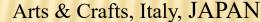
BRING NATURE OUT OF MATERIALS, but Innovate (Textile Blocks, Modular "Ken" Design, etc.)

STRUCTURAL ART like in Nature (e.g., the veins in Leaves) - Interior space made exterior as architecture

SOFT WARM OPTIMISTIC COLOR TONES of earth, and autumn leaves

ASSIMILATE FIXTURES into structure, BUILT-IN FURNITURE many plants & planters

ARCHITECTURE = MUSIC



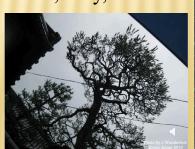


MUSICIAN Preacher **FATHER**



ARCHITECT **MENTOR Louis** Sullivan









NOTE: COMPRESSION & RELEASE is not Organic Design, but commonly used by FLW to cramp/hide entries so as to magnify destination Architecture

See more on ORGANIC ARCHITECTURE DESIGN PRINCIPLES:

Wunderlich Lecture Series on "The Life and Work of Frank Lloyd Wright" ©



1867-1958

ARCHITECTURE DESIGN THEORY



LECTURE SERIES

PART	1 PRI	MARY	ELEM	1ENTS

PART 2 FORM

PART 3 FORM & SPACE

PART 4 ORGANIZATION (This Lecture)

PART 5 CIRCULATION

PART 6 PROPORTION & SCALE

PART 7 PRINCIPLES

PPTX MP4 YouTube PDF

PPTX MP4 YouTube PDF