

# PROJECT 01

## AMERICAN MUSEUM OF THE BEAUX-ARTS

ARC 3210 | Architecture Design Studio IV | Prof. Brandon Ro, AIA, NCARB

### PHASE 3 – DESIGN DEVELOPMENT

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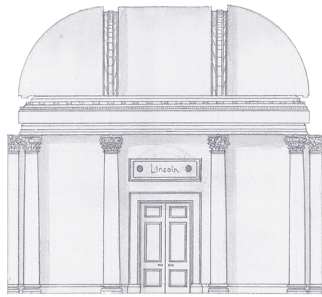


#### DESIGN DEVELOPMENT

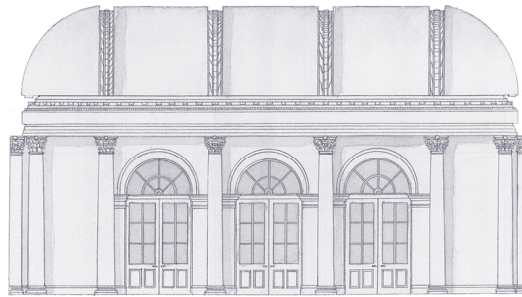
With the knowledge gained from the Schematic Design phase, students will begin refining their design proposals. These refinements should continue to address the project's program, client requirements, and user needs. As outlined in the course schedule, design development includes the following activities:

- Begin Revisions from Review - Plan, Section, Elevation
- Begin Interior Design of major space
- Begin Final Drawings, Perspectives / Photo Montage, Analogue Model
- Ornament Workshop / Development of Ornament / Motifs
- Layout Details at Large Scale
- Review Analytique Layout Options
- Draft Analytique and start pen overlay

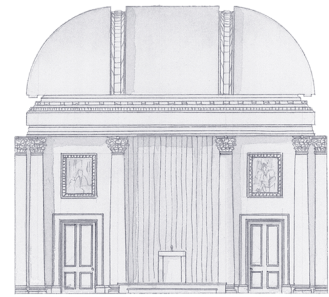
- Shade and Shadow Casting
- Watercolor Rendering
- Preparation for Final Review - Finalize Analog Model, Print Boards
- Hand in Project / Pin Up Materials for Review
- Final Design Review with Professional Jury
- Project DD Phase Reflections
- Digital Portfolio Due



EAST ELEVATION



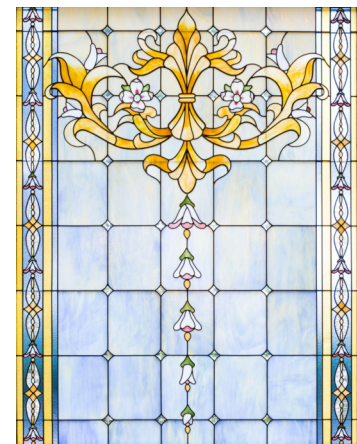
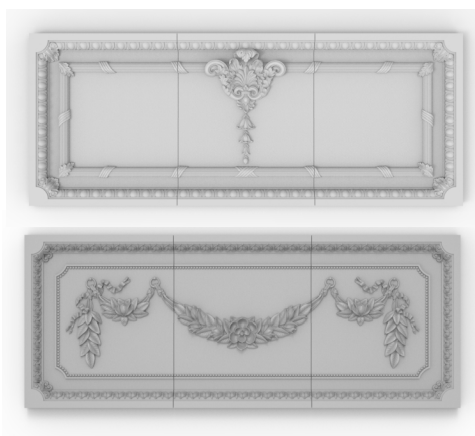
SOUTH ELEVATION



WEST ELEVATION

## INTERIOR DESIGN

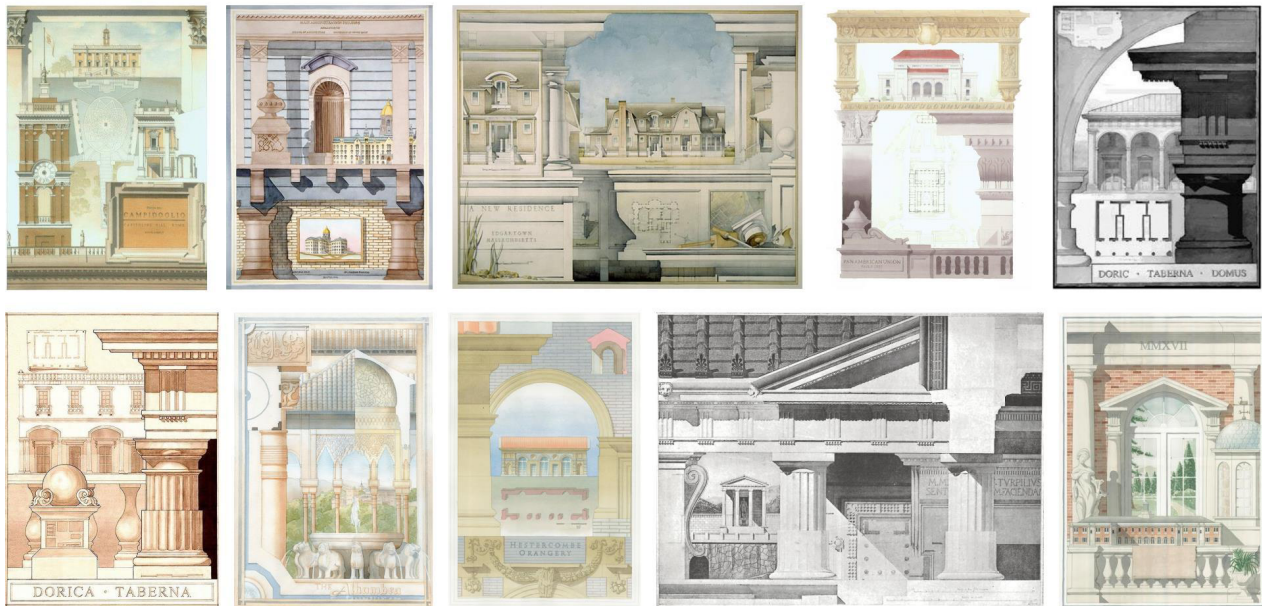
Some of the most extraordinary experiences in architecture occur within building interiors. These are the spaces we inhabit and experience more than the external façade. As such each designer must approach the design of the interior with care and attention to detail. During the design development phase, each student is required to fully develop a significant interior space in floor plan, ceiling plan, interior elevations, section, and perspective. An entire board will be devoted to the development of this significant interior space.



## MOTIF / ORNAMENT DEVELOPMENT

“A building without ornament,” said George Santayana, “is like the heaven without stars.” As part of the design development phase, each student will work on incorporating several motifs as part of architectural ornament for their design project. The students will undergo a series of design exercises that will help them learn the fundamental principles that

govern successful architectural ornament. The successful design and application of architectural ornament will be manifest particularly in the final analytique rendering.



## ANALYTIQUE

“To design is to compose, but to compose one must have objects with which to compose; for the architect these are the ‘elements of architecture,’” wrote John Harbeson. Embedded in the *Ecole des Beaux-Arts* curriculum (which descended from the Academie royale d'Architecture in 1671 during the reign of Louis XIV) was *analytique rendu* (analytical rendering). An analytique was defined as a codified design problem that dealt with the elements of architectural design. It consisted of a single page composition of items such as a floor plan, elevation, detail, ornament, perspective, etc.

The purpose of the analytique drawing was to demonstrate that a student had gained both an understanding and developed their skills in the following areas:

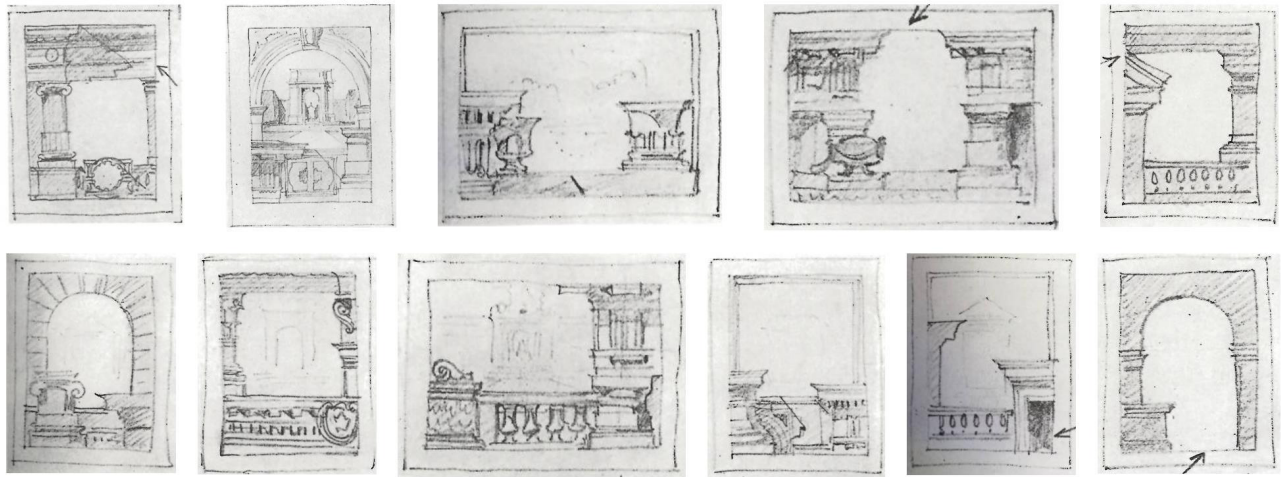
- Sensibility to proportion
- Feeling for composition
- Character in drawing
- Appreciation of ornament
- Knowledge of descriptive geometry in projections and in shades and shadows

In order to create the final watercolor analytique, each student will follow three simple steps.

### **STEP 1 - Create Thumbnail Concepts for Analytique Composition**

Each student should compose four (4) thumbnail concepts for their analytique composition. Each thumbnail can be created on trace paper or in your sketchbook and will be a minimum of 3"x5" in size. Each composition can have an arrangement of the following items: floor plan,

elevation, site plan, building section, wall section, bay elevation, column order, ornament details, etc. **Please bring your concepts into class to review with the instructor for final approval to move onto step 2.**

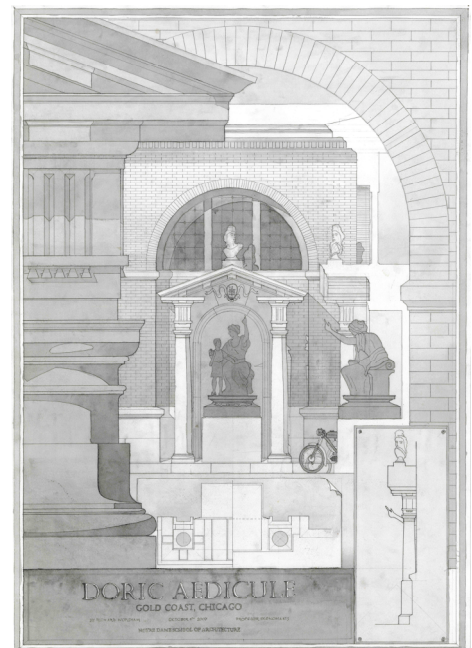
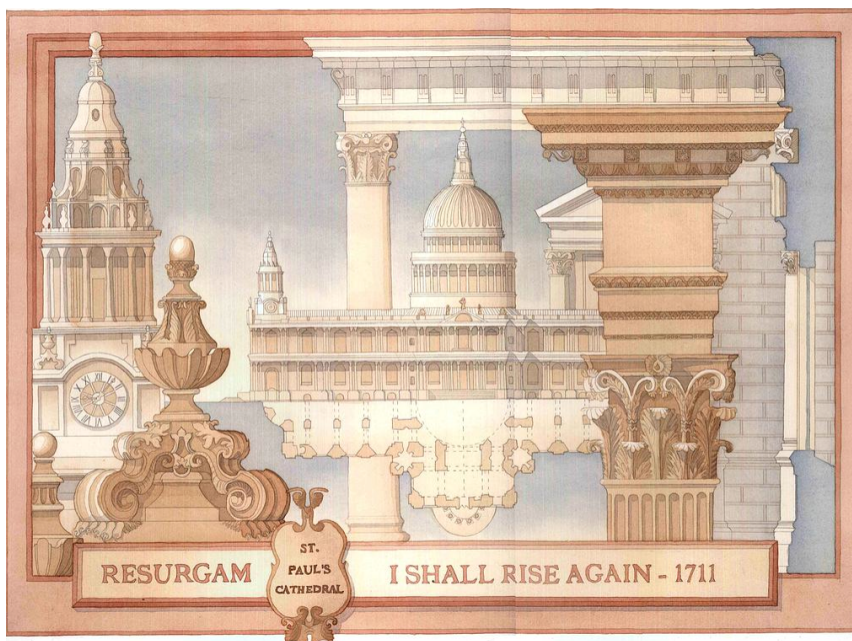


**STEP 2 - Draw your Analytique Composition in Pencil/Pen**

In the next step you will draw the composition of your choice, after reviewing them with the instructor, in pencil / pen. This composition will be part of your final drawing and will be drawn on a large format sheet of watercolor paper (24"x36" min). The orientation of your drawing (landscape or portrait) will be determined based on your composition.

**STEP 3 - Apply color, shade, and shadow to the Final Analytique Rendering**

In the final step, you will apply color, shade, and shadow to the elements in your drawing with watercolor techniques to demonstrate materiality, depth, and character for your project.



## FINAL REVIEW DELIVERABLES

For the Final Design Review, each student will work on developing their projects by producing the following drawings. These will be assembled on several 24"x36" drawing sheets.

- Site plan showing roof plans and context around site, such as roads, trees, green space, sidewalks (1"=50')
- Main Building Elevation with side buildings shown, include people for scale and trees (1/8"=1'-0")
- Floor plans of all levels with spaces labeled (1/8"=1'-0")
- Longitudinal and cross sections of building showing context, include people and vegetation for scale (1/8"=1'-0")
- Wall section showing molding profiles (1/4"=1'-0")
- Bay elevation demonstrating understanding of masonry joints (1/4"=1'-0")
- Motif / Ornament details (3"=1'-0" or larger depending on area)
- Detailed analog model to fit into class site model (1/8"=1'-0"). A high level of craft is expected.
- Diagrams showing curatorial strategy
- Diagrams showing daylighting strategy
- Diagrams showing program organization / circulation
- Large exterior perspective as a photo montage (+/- 12"x24")
- Large interior perspective vignette conveying user experience (+/- 12"x24")
- Enlarged floor plan, enlarged ceiling plan, interior elevations showing interior design of major space (1/4"=1'-0" or larger)
- Watercolor analytique containing a series of elements from the project in a composition (e.g., main elevation, floor plan, enlarged details of classical order, ornament, wall section, bay elevation, etc.)

Each drawing should include a titleblock and the following:

- North arrow (when appropriate)
- Graphic scale
- Drawing type label (Ground floor plan, East elevation, section)

## RELATED READING

- Adam, Robert. *Classical Architecture: A Comprehensive Handbook to the Tradition of Classical Style*. New York: Harry N. Abrams, 1991.
- Ching, Frank. *Architecture: Form, Space, & Order*. 3rd ed. Hoboken, NJ: John Wiley & Sons, 2007.\*
- Alberti, Leon Battista. *The Ten Books of Architecture: The 1755 Leoni Edition*. New York: Dover, 1986.\*
- Chitham, Robert. *The Classical Orders of Architecture*. 2nd ed. Burlington, MA: Architectural Press, 2005.
- Clark, Roger H., and Michael Pause. *Precedents in Architecture: Analytic Diagrams, Formative Ideas, and Partis*. 3rd ed. Hoboken, NJ: John Wiley & Sons, 2005.
- Curtis, Nathaniel Cortlandt. *The Secrets of Architectural Composition*. Mineola, NY: Dover, 2011.
- Cusato, Marianne, and Ben Pentreath. *Get Your House Right: Architectural Elements to Use & Avoid*. New York: Sterling, 2011.

- Gabriel, Jean-François. *Classical Architecture for the Twenty-First Century: An Introduction to Design*. New York: W.W. Norton & Company, 2004.
- Glazier, Richard. *A Manual of Historic Ornament: Treating Upon the Evolution, Tradition, and Development of Architecture & the Applied Arts*. New York: Chas. Scribners Sons, 1914. PDF available at:  
[https://www.google.com/books/edition/A\\_manual\\_of\\_historic\\_ornament\\_treating\\_u/CQBZAAAAYAAJ?hl=en&gbpv=0](https://www.google.com/books/edition/A_manual_of_historic_ornament_treating_u/CQBZAAAAYAAJ?hl=en&gbpv=0)
- Gromort, Georges. *The Elements of Classical Architecture*. 1st ed, The Classical America Series in Art and Architecture. New York: W.W. Norton, 2001.
- Harbeson, John F. *The Study of Architectural Design: With Special Reference to the Program of the Beaux-Arts Institute of Design*. New York: W.W. Norton, 2008.
- Hersey, George L. *The Lost Meaning of Classical Architecture: Speculations on Ornament from Vitruvius to Venturi*. Cambridge, Mass.: MIT Press, 1988.
- Jones, Owen. *The Grammar of Ornament*. London: Bernard Quaritch, 1868. PDF available at:  
[https://www.google.com/books/edition/The\\_Grammar\\_of\\_Ornament/6xI8AQAAMAAJ?hl=en&gbpv=0](https://www.google.com/books/edition/The_Grammar_of_Ornament/6xI8AQAAMAAJ?hl=en&gbpv=0)
- Martineau, John, ed. *Quadrivium: The Four Classical Liberal Arts of Number, Geometry, Music, & Cosmology*. New York: Bloomsbury USA, 2010.
- Mouzon, Stephen A., and Susan M. Henderson. *Traditional Construction Patterns: Design and Detail Rules of Thumb*. New York: McGraw-Hill, 2004.
- Palladio, Andrea. *The Four Books of Architecture*. New York: Dover, 1965.\*
- Schneider, Michael S. *A Beginner's Guide to Constructing the Universe: The Mathematical Archetypes of Nature, Art, and Science*. New York: HarperCollins, 1994.\*
- Semes, Steven W. *The Architecture of the Classical Interior*. New York: W.W. Norton, 2004.
- Semes, Steven W. *The Future of the Past: A Conservation Ethic for Architecture, Urbanism, and Historic Preservation*. New York: W.W. Norton & Company, 2009.
- Stratton, Arthur. *Form and Design in Classic Architecture*. Mineola, NY: Dover, 2012.
- Summerson, John. *The Classical Language of Architecture*. Cambridge, MA: MIT Press, 1963.
- van Pelt, Robert Jan, and Carroll William Westfall. *Architectural Principles in the Age of Historicism*. New Haven: Yale University Press, 1991.
- Vitruvius Pollio, Marcus. *Vitruvius: The Ten Books on Architecture*. Translated by Morris H. Morgan. New York: Dover, 1960.\*
- Ware, William R. *The American Vignola: A Guide to the Making of Classical Architecture*. New York: Dover, 1994. Older edition PDFs available online: (Book 1)  
<https://archive.org/details/cu31924091026504/page/n1> (Book 2)  
<https://archive.org/details/americanvignola00vigngoog/page/n5>

- Wittkower, Rudolf. *Architectural Principles in the Age of Humanism*. London: Academy Editions, 1998.
- Students may also want to reference other free digital e-books about architectural design at the following links:
  - <https://www.classicist.org/resources/digital-rare-books-archive/>
  - <http://onlinebooks.library.upenn.edu/webbin/book/browse?type=lcsb&key=Architecture&c=x>

## DD PHASE ASSESSMENT

Your design project will be graded based on the following criteria:

LEARNING OBJECTIVE	POINTS
<b>DESIGN SOLUTION:</b> Successful design solution to fundamental architectural problems that integrates concepts, formal/visual principles, creative inquiry, and techniques that address the functional and programmatic requirements of the project.	40 (20%)
<b>FORMAL &amp; SPATIAL PRINCIPLES:</b> Demonstrates fundamental understanding and application of formal, spatial, and aesthetic principles. (e.g., proportion, classical orders, geometry, user experience, human scale, beauty, hierarchy)	20 (10%)
<b>ANALYTIQUE:</b> Successful watercolor analytique rendering demonstrating a knowledge and application of graphic composition, classical ordering systems, ornament, shade/shadow, materiality, and parti.	40 (20%)
<b>SITE DESIGN:</b> Project addresses the immediate site, neighborhood, and urban design needs of the area. Design proposal appropriately responds to issues emerging from the historic district, immediate context, socio-cultural demographic, and institutional presence.	10 (5%)
<b>VISUAL/GRAPHIC COMMUNICATION:</b> Communicates design solutions effectively using architectural presentation materials and techniques (e.g., line weights, level of detail for scale, level of craft, organized graphic presentation). This also includes analog models and their ability to adequately convey the main project characteristics.	10 (5%)
<b>USE OF PRECEDENTS:</b> Project clearly makes informed and well-reasoned choices regarding the incorporation of design principles from precedent analysis.	10 (5%)
<b>DESIGN PROCESS:</b> Project demonstrates a rigorous and successful design process. This will be evident in the refinement of the selected concept sketch ( <i>esquisse</i> ) to the final design solution (e.g., development of plans, sections, elevations, models, diagrams, perspectives, etc.)	10 (5%)
<b>VERBAL COMMUNICATION:</b> Verbal communication is well planned and executed. Presentation results in further discussion of the design solution.	10 (5%)
<b>INTERIOR DESIGN:</b> Project successfully demonstrates a fundamental understanding	20 (10%)

and application of formal, spatial, and aesthetic principles for a major interior space. (e.g., proportion, classical orders, geometry, user experience, human scale, beauty, hierarchy)	
<b>MOTIFS / ORNAMENT:</b> Project successfully demonstrates the incorporation of motifs and architectural ornament for a significant element of the building which reinforces the purpose and symbolism of the client and program.	20 (10%)
<b>PROJECT REQUIREMENTS:</b> All project requirements and criteria are met, such as deadlines, deliverables, format, portfolio, etc.	10 (5%)
<b>TOTAL</b>	<b>200 points / 100%</b>