Jewelry on Display
The Art of Artful Detailing

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Abstract

The thesis reasearch, process, and documented projects which follow were an attempt to discover and learn the meanings and messages of ornamentation. A variety of means--from writings to the final project of a Jewelry Gallery--were tried as an investigation to this end with varying degrees of success. The research pointed in different directions at different times extending a range from the strict observance of nature to pure common sense. The process ended in an obvious, yet assuring, conclusion which designers have known for centuries.
This Thesis Document is submitted in partial fulfillment of the course requirements for Architectural Thesis ARCH 406 and the requirements for the degree Bachelor of Architecture.

Building type--Jewelry Gallery
Location of Project--New Harmony, Indiana

Thesis Committee Chair--Arthur Schaller
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College of Architecture and Planning. 53 pages.

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Published by the College of Architecture and Planning
Ball State University
Muncie, Indiana 47306
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1 Relationships
Throughout the four years of formal architectural training preceding thesis, I have slowly developed a personal design process created to take advantage of what I consider strengths. By concentrating on and exploiting these strengths, I have essentially, in the system, been allowed to neglect a few significant design elements. Of these I feel the ability to understand and manipulate details—specifically "ornamental" details—is a most important faculty which has not matured properly. In order to strengthen the design competency, my thesis proposal focuses on the topic of ornamentation.

Today's architectural society may be seen as accepting the garnishing of basic, predictable building forms with ornamentation as thinly constructed and applied as it is justified. The practice of the pastiche was once a viable reactionary response against the prevalent curtain wall, but it has quickly fallen into a dogmatic world of empty reproduction. My thesis had intentions of taking a studied look at the history of ornamentation, realizing, of course, that architectural ornamentation was not always easily or feasibly divisible from that which it "decorates," and meaningfully linking the forms to the culture that produced them. My original thesis statement was as follows:

The need for artistic expression is human. Architecturally, this expression is most directly manifested in ornamentation. Ornamentation has traditionally been subject to the prevailing attitudes and
needs of the society by which it has been produced. Ornamentation bears a direct relationship with culture.

The discussion concerning ornamentation is an old, yet always topical, one. John Ruskin in the mid-nineteenth century wrote, "It is ornament which distinguishes architecture from mere building." But ornamentation—the deliberate, orderly decoration of a space—has roots much older than those which produced what we today think of as "architecture." Examples of deliberate, orderly decoration may be found as early as 20,000 B.C. with the painted Hall of Bulls in the cave at Lascaux, France. Although not a man made structure, the artists respected the natural architecture of the cave and created a holistic environment with the careful addition of their images. What were these images telling about the artists culture?

An interpretation of history may lead one to believe that as man began to understand the principles and inherent relationships of mathematics, ornamentation became more rigidly ordered. This may be seen to a degree in Egyptian burial temples ca. 3000-1000 B.C., but is best exemplified in the complex, mathematically sized ornamentation of Grecian temples ca. 450 B.C. These dictated relationships seemingly left room for "improvisation" only in the metope and frieze reliefs, if these elements were carved at all.

The research began in these ancient contexts and moved forward through time. Considering in a more modern era the similarly based, yet diametrically opposed, views on ornamentation design held by John Ruskin and Owen Jones, published in 1849 and 1856, respectively, the research started to present several questions, which in turn spurred many more questions. Was Ruskin and Jones' regard for nature-as-ornament a sign of the times in which they lived, or is nature a recurring theme in ornamentation which the two happened to be the leaders for the time? What do the variation in a single movement—for example, "streamline" vs. "jazz" motifs in Art Deco—tell about the subtleties of the culture that produced them? Does Robert Venturi's concepts on the "duck and the decorated shed" speak in a similar manner? And does Michael Graves' practiced ideas on the artificial treatment of finishes exemplify today's American lifestyle?

Through my research I began searching for the pattern, a relationship between ornamentation and (of course) building type. But more importantly, I began searching for a relationship between ornamentation and culture. By looking at historical particulars in ornamentation across many cultures, my thesis hoped to find the generalities—if any—common to the culture/ornament relationship. With theses "rules of thumb," I planned on developing an outline for a style of ornamentation appropriate to today's American culture. This architectural ornamentation would then be demonstrated in the context of a design project illustrative of today's culture.
2 Bringing the Inorganic to Life
As one would expect, studying the entire scope of architectural history soon proved to be overwhelming. To comprehend the subtleties and not just the broad picture of architectural history, it became obvious that either the subject matter or the time frame of the research in question had to be narrowed. I chose to define both further.

The subject matter became more focused on the complex question of exactly what ornamentation is, and the relationship with culture was set aside. Without understanding ornamentation per se, little hope existed of finding an effective link with culture at all.

The time frame selected included the last 200-250 years of architectural history, for these years set the stage for today's architectural state.

The newly focused thesis research directed me to an interesting new hypothesis. Findings showed a correlation between the beginnings of new architectural ornament and the inspiration of nature. The thesis statement evolved into the following:

When architectural ornament (or "style" for this discussion) reaches a point of indecision or dilemma, when there is no apparent path for refinement or experimentation, the artist reaches back to ornament's very origin, nature. This process has shown itself to be true repeatedly throughout history.
The last completed style has been the Modern Movement, I believed, whose cycle had lasted over 100 years.

Modernism—or the Machine Aesthetic—of the 1930’s and beyond may be traced back to the early/mid nineteenth century when a point of indecision in architecture had again arrived. This indecision in the newly formed America was a result of the new bourgeoisie in power. The preoccupation of the masses was to simply reorder society in their break with England. During the ensuing political frenzy, they were incapable of actually fostering a new philosophy which could express itself in an original piece of architecture.\(^1\) The look desired by this new country was a look which would be associated with strength, if for no other reason than self-assurance. This was an open gateway to literal imitation of historic styles and ornament.

Thomas Jefferson’s state capitol building at Richmond, Virginia (1789-98), was Roman in style because Jefferson and his contemporaries wished the newly created United States to be identified with the greatest working republic of them all, the old Roman republic. Their Federal style was an evocation of the country’s ideal of republican government. Later, as the aspirations of the country shifted from republicanism to democracy, the Greek Revival style expressed those aspirations in buildings that evoked the democracy of ancient Greece. The old U.S. Custom House (designed in 1834) in lower Manhattan was as nearly a replica of the Parthenon as its banking functions would allow.\(^2\)

Another factor contributing to the confusion of the early nineteenth century was the combination of the Industrial Revolution with the new material of iron. Before the Industrial Revolution, ornamentation somewhat accurately represented the wealth of the owner. But once the new technology of mass production was introduced to the ornamental world, "decoration" was easily available to everyone. For the first time in history, ornamentation was not limited to the rich. The "near rich" could ornament their home, office, store with "opulent" decoration as well. The correlation between the rich and ornament was visually blurred. A new Victorian value was expressed: "If ornament makes something more beautiful, then increasing it all everywhere will make things most beautiful."\(^3\) Ornament was out of control.

The beginning of the nineteenth century may therefore be looked upon as nothing more than a blurry parade of stylistic revivals with no real future for expirementation or refinement. Architecture was in a state of indecision.

A cry for a new architectural style was heard. Something that would, if nothing else, restore the value to ornament. John Pollard Seddon, in 1852, summed up the attitude of the day when he wrote against "cramming carved work upon a building without meaning or propriety."

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\(^3\)Ibid., p. 7.
During this period of confusion, a general analytical attitude prevailed in virtually every field. Efficiency studies and division of labor appeared in industry. Charles Darwin intellectually and scientifically analyzed the earth's life history in his 1859 *Origin of the Species*. Architectural ornament could not help but fall prey to this analytical wave.

The essential thought was that the secret of ornament would be revealed by the systematic analysis of the plurality of the world's styles. This idea was expressed by many, but the most famous of these intellectual practitioners was Owen Jones. His 1856 *The Grammar of Ornament* was a set of 100 color prints classifying and describing historic styles of ornament. This was in part made possible by the new practice of "professional" archaeology. The styles of history were laboriously dissected and defined. Ornament was now codified; ornament was now considered a separate element.

But Jones's intent of this book was not as a "style guide" through history. The publication was meant to serve as an inspiration to designers for the innovation of new ornament. This was not the most significant aspect of his work, though, for this study.

The significance is that the book relied on *nature* as the inspiration. When decidedly defining or codifying ornament in the architectural indecision of the early/mid nineteenth century, Owen Jones (as did a large number of "style seekers" at this time) relied on nature. Establishing the theme of nature-as-ornament is not enough in itself, however, for there are several methods which use nature as
ornament. The two most important views on nature-as-ornament at this time may be represented by John Ruskin and Owen Jones. Ruskin's view on ornament was expressed in his 1849 *Seven Lamps of Architecture*. Ruskin believed in the exact reproduction of nature itself in stone or wood to ornament a building. He scorned the refinement of nature. This strict path could lead nowhere significant in the long run for "no refinement" was synonymous with "no progress."

The other view, held by Owen Jones, also embraces the representation of nature in ornament. His ideal, though, was that nature and flowers in particular "should not be used as ornaments," rather they are merely conventional objects to express the thought "all form is geometry" (certainly a Machine Aesthetic idea). Nature was here abstracted to make a point.

This point is expressed more clearly by Ruprich-Robert when he was published in Cesar Daly's periodical *Revue Generale de l'Architecture* at essentially this same time. He wrote:

Undoubtedly it will be noted that the plants reproduced in our drawings are not always strictly accurate anatomically. That was precisely our intention. We did not want to render nature faithfully. Monumental art, or the simple caprice of the ornamentalist, demands a certain convention. We have

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sometimes interpreted out subjects by making them symmetrical.

This geometric interpretation of nature in the mid nineteenth century is the significant, if not disguised, beginning of Modernism. From this beginning it was "simply" a task of time for the abstracted, geometric principle to be handed from architect to architect for contemporary interpretation over successive years, arriving eventually at the Machine Aesthetic.

The first architect in this chain of architects is Philadelphia based Frank Furness. Furness was more than aware of Owen Jones's writings and philosophies. In fact, many pages of Furness's sketch book reveal architectural ornament drawings of flowers in geometric "plan" and "elevational" views similar to those published by Jones.

Perhaps Furness's best known work, the Pennsylvania Academy of Fine Arts of the early 1870's, shows fine examples of applying Jones's philosophy of geometry-in-nature as ornament. Detailed stone carvings over two windows in the front of the Academy show direct Jones influence in the symmetry and abstract forms the foliage takes. These carvings were to carry great significance in the evolution of Modernism, for these are the inspiration for another architect.

The design, and perhaps even the execution, of the Academy's ornamentation was taking place while young Louis Sullivan was
working as a draftsman in Furness's office. Sullivan came to Furness's office in the summer of 1873 at the age of sixteen, telling Furness that he would be working in the office, and that Furness had "no voice in the matter."

In any case, Sullivan became intimately familiar with the ornamentation of Furness's Academy while drafting in the office for a short time. (The depression of 1873 hit Furness's office, and the young draftsman had to be dismissed.) Sullivan was deeply affected by this ornamental style, as his drawings soon thereafter reflect. A drawing Sullivan later gave to Frank Lloyd Wright that was completed in November of 1874 in Paris was strongly dependent upon the ornament of the Academy and may be easily compared to Furness's window ornament mentioned above.

Here it is established that Louis Sullivan was knowledgeable of Owen Jones's original geometric principles in nature as ornament through Frank Furness. It is now Sullivan's task to interpret this philosophy into his time.

Louis Sullivan's treatise *A System of Architectural Ornament* of 1924 presents the mystical logic and methodology behind his ornament. The significant point to be made here is that the method in which Sullivan indicated his reliance on nature's laws as a basis for design is similar to the method utilized by Owen Jones in his publication. Sullivan in his book deals primarily with individual

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6 Ibid.
pieces of ornamentation, not fields or planes of ornament. The system revealed here for design of ornament is a straightforward approach concerning mostly geometry. Thomas H. Beeby writes:

Design begins with the choice of a particular geometric form. This form is then subdivided and manipulated, according to the innate geometry of the figure, and developed along its inherent axes. The original geometric form is envisioned as a container of radial energy with a potential for growth along its primary and secondary axes. As the figure develops through a series of manipulations, a multitude of possible configurations becomes evident.7

Sullivan perceived this part of the process as very mechanical and self-evident. His term for this portion of design was "efflorescence" and thought of as "inorganic." Upon this background of geometry, Sullivan would then develop organic forms along the "radial axes of growth." The obvious emphasis Sullivan placed on such "radial growth" with axes and sub-axes may clearly be compared to Owen Jones' system of a primary stem. For Sullivan, the completion of the design process represents the will of Man to bring the inorganic to life. This strong will possessed by Louis Sullivan goes beyond mere ornament and hits the very core of architecture itself, as is demonstrated by Sullivan disciple Frank Lloyd Wright.

Detail from Plate 2 of Sullivan's A System of Architectural Ornament, 1924.
3 No Past and No Future
Soon after his arrival in Chicago, Frank Lloyd Wright became acquainted with Owen Jones' *The Grammar of Ornament*. We are certain of this because Wright speaks of his encounter in his autobiography. He states:

I...traced the multi-fold designs. I traced evenings and Sunday mornings until the packet of one hundred sheets was gone and I needed exercise to straighten up from this application.

It should be expected that Wright would so embrace Jones's book of dissection, for Wright was born into one of the first generations raised in the new world of analytical process. As a child, Wright's mother exposed him to the teachings and philosophies of Frederick Froebel, an intellectual philosopher of the previous generation.¹ The Froebel system taught that children should not be allowed to draw from casual appearances of nature until they had first mastered the basic forms lying hidden behind those appearances. Geometric elements were what should first be make visible to the child-mind.

Wright goes on in his autobiography to describe his childhood learnings:

For several years I sat at the little kindergarten table top ruled by lines about four inches apart each way making four inch

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squares; and, among other things, played upon these "unit lines" with the square (cube), the circle (sphere), and the triangle (tetrahedron or tripod)... All are in my fingers to this day.... The virtue of all this lay in the awakening of the child-mind to the rhythmic structure in Nature--giving the child a sense of innate cause and effect otherwise far beyond child-comprehension. I soon became susceptible to constructive pattern evolving in everything I saw. I learned to "see" this way and when I did, I did not care to draw casual incidentals of Nature. I wanted to design.

Here it is established that Wright came from a background of intellectualization and was familiar with the works of Owen Jones at an early age in his career. He is essentially a child of the mid-nineteenth century philosophy. It is now Wright's task to carry and interpret this philosophy into a new generation.

Wright began his career fluxuating between two Chicago firms before he finally quite his drafting job at Sillsbee's office and entered the office of Adler and Sullivan. Wright eventually became Sullivan's closest collaborator. After a few years Wright had mastered Sullivan's technique and style to a point that, at times, Sullivan himself could not distinguish Wright's ornament drawings from his own. ²

Once Wright had reached this state of imitation, he began improvising and experimenting in Sullivan's style. But this experimentation led to a discovery by Wright of a fallacy in Sullivan's architecture: materials meant nothing to "the master." Every material, whether stone, wood, or iron, was treated as clay in Sullivan's hands. There was no respect for the nature of materials.

Additionally Wright found a flaw in Sullivan's actual expression of his ideals. Sullivan's ornament, according to Wright, was merely considered a dressing, covering the structure with embellishments. ³ In this sense--the big picture sense--Sullivan was no different from the Victorians. It was the theories of geometry practiced in the isolated ornamental pieces that was the advancement. This is the baggage Wright walked out of Sullivan's office with in 1895.

Wright, in his brilliance, was able to see the large scale version of architecture as an evolution of an idea or philosophy. He wrote:

But if a building was ever to be organic in the same sense that this deeply individual expression of himself (Sullivan in his ornament) was so and prophesied it, this lifetime, at least, is only a beginning.

Wright was bothered with the traditional division between exterior and interior of a building. It was his idea that the two should be as one. The building should contain the same plasticity found in Sullivan's ornament. This plasticity of Sullivan's, now

²Frank Lloyd Wright, Genius and the Mobocracy, p. 71.

³Beeby, Grammar, p. 18.
interpreted by Wright, in turn "carried in its own nature implications of unexplored structural continuity and could exemplify, simplify and even prove the aesthetic validity of structural forms themselves." This quotation by Thomas H. Beeby obviously can be seen as the crucial intellectual link between the philosophy of Owen Jones and the Machine Aesthetic of the twentieth century.

With Wright's drive for unity, the line between structure and ornament was blurred. He began to mesh ornamental moldings with structural elements. Wright clearly and honestly expressed materials. He also incorporated prefabricated elements of his time, exploiting the potential for repetition. The plans for many of Wright's buildings were derived from grids, at once organizing the framework for construction and ornament. His Unity Temple of 1906 shows the progression and growth of his philosophy of design and may be easily compared to an example of Sullivan ornament. Wright's buildings of this period are ornament structuralized, having as their roots the nineteenth century philosophy of nature-ornament.

The early work of Frank Lloyd Wright proved to be quite an influence on architecture as a whole, especially on the work of up-and-coming European architects who were looking for a path away from the historical styles so consistently relied upon. Wright's influence was most strongly seen in countries such as Holland and Germany. His interpreted philosophical concepts of plastic form and geometry had an impact on many, but, most significantly, on Mies
van der Rohe who was just coming into maturity at the time Wright was becoming worldly significant.

Mies van der Rohe had no formal architectural training. His education came from hands-on work experience as an apprentice on several building sites. He was a draftsman and a designer of stucco ornament before he moved in 1905 from Aachen to the capital of architectural design in Germany at the time, Berlin.

After apprenticing as a furniture designer in Berlin, Mies, through a house commission, was exposed first hand to Rome and the buildings of the Italian Renaissance in 1907. Two years later he went to work in the office of Peter Behrens (just one year before Le Corbusier did the same). Behren's decided interest in the industrial aspect of architecture had a significant effect on Mies. What these two aspects—his interest in the Italian Renaissance and the influence of Peter Behren's structuralism—brought to Mies's mind was the essential conflict between the traditional forms of history and their interpretation in modern materials and technology. This basic intellectual conflict is what spurred Mies to find an architecture appropriate for the modern world.4

His search for a new architecture was greatly guided initially by the works of Frank Lloyd Wright. Mies wrote:

At this moment, so critical for us, the exhibition of the work of Frank Lloyd Wright came to Berlin. This comprehensive

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4Ibid., p. 21.
display and the exhaustive publication of his works enabled us to become really acquainted with the achievements of this architect. The encounter was destined to prove of great significance to the European development.

The work of this great master presented an architectural world of unexpected force, clarity of language and disconcerting richness of form. Here, finally, was a master-builder drawing upon the veritable fountainhead of architecture; who with true originality lifted his creations into the light. Here again, at long last, genuine organic architecture flowered... The dynamic impulse emanating from his work invigorated a whole generation. His influence was strongly felt even when it was not actually visible.

Here is shown, by Mies's own admittance, that what would come to be known as the Modern Movement was strongly influenced by Frank Lloyd Wright's works and philosophies, which has, in turn, been shown to have been based upon the intellectual philosophies of the mid nineteenth century. Mies is simply the porter for these philosophies whose responsibility it is to interpret them for his time.

In the beginning years of Mies's professional life (during and just after World War I) there was unfortunately little building activity. Most of the progress in this age was made in the intellectual arena. During the construction decline, Mies directed the
The Constructivist movement, which had been present for centuries in the more decorative arts, had not infiltrated the architectural world until architects were ready to accept their influence. This acceptance was accomplished through the preparation of generations of architects, as has been shown.

To act as a meeting place, a meshing ground for the artists of many fields ready to unite, the Bauhaus was established in the 1920's. An emphasis was placed on craftsmanship, geometry and objectivity of design. Also developed and emphasized here was the philosophy that design was a process that worked from a small, detailed scale into a larger, holistic scale.

Mies began his theoretical work with a project for a new skyscraper, The Glass Skyscraper in 1919. The design was an undulating plan shooting straight up an indefinite number of stories. The idea was to produce a feel of total weightlessness to contrast the actual mass that must accompany a building so large. But more importantly, the unadorned, transparent skin would clearly show the structural system for what it was. No embellishment, just simple expression.

This Mies van der Rohe project shows perhaps the most significant development in the evolution of the Modern Movement: the leaving behind of nature for the pureness of "unadorned" geometry. Frank Lloyd Wright was the last of the chain to visually

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represent nature in the design process. No matter how abstract Wright's stained glass window patterns became, they where visual references to nature. Oppose this to the next generation, represented here by Mies, who is concerned only with the purity of mathematical, geometric form, almost to the exclusion of the natural human experience.

Although nicely demonstrated in Mies's Brick Country House of 1923, perhaps one of the finest examples of the new ideals of Modernism can be seen in his Barcelona Pavilion of 1929. The roof structure is a freestanding element with partition walls standing unattached below in a seemingly free flow of space. The floor is grided in travertine slabs. The columns supporting the overhead plane are cruciform to express their structural composition and are placed on the joinery of the travertine.

But again comes the contradiction. Although the spaces in the Barcelona Pavilion seem to be free flowing, they are actually dictated by the strict grid pattern of the floor. All walls, columns, and even the minimal furniture observe its rules. The balance of the parts, the strict rectilinearity, and the freedom of arrangement clearly follow Constructivist and Modern guidelines.6

In this sparse, unadorned design is yet another contradiction which is exemplary of the Modern Movement. The theory is of an architecture devoid of the ornamental, yet this is everything but the truth. At the very heart of Modernism are the theories and practices of ornament itself. Instead of decoration being applied to structural

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6Beeby, Grammar, p. 23.
material, the ornament is now the literal material of construction. Mies did not begin the literal design of the Barcelona Pavilion until he found the appropriate block of onyx, for that onyx was his ornament.\footnote{Ibid., p. 24.}

The abstraction of natural forms into the hard-lined Modern Movement becomes easier to understand when we look at a specific individual's work and follow it through various stages of development. The paintings of Piet Mondrian visually support this discussed abstraction development. The works begin with a somewhat literal representation of nature (the tree in specific) and slowly abstract to become grids of ocaissionally colored rectilinear forms, closely paralleling the development of the Modern Movement.

The Mondrian examples represented here were executed between the years of 1908 and 1925, the same basic time period that Frank Lloyd Wright was making the important jump from the nature-inspired plasticity of Sullivan's ornament to the now abstracted "rigid" nature of the total building.

Time refined the philosophies of Modernism essentially without changing them. Continuing the focus on Mies, his campus plan for the Illinois Institute of Technology, developed for almost twenty years up through 1958, displays a refinement of the philosophies existing without significantly changing them.
As the Modern Movement hit the masses of America a generation later, reproductions and "rip-offs" of smooth-faced skyscrapers soon populated the cityscape by architects who understood little of the subtleties involved in the masterpiece patterns. But how could they understand? Teachings of proportions, orders and rules of traditional ornament had been pulled from the educational background of second generation Modernists. This is why refinement and experimentation in the movement ceased; they simply did not have the knowledge to refine. Adolf Loos warned of this dangerous ignorance in a 1924 paper, stating that "The ornament which is created today has no connection with us....(it) has no parents, no descendants, no past and no future." He goes on to suggest that the teaching of classical ornament in schools would not be out of line, for it brings order into our lives from which we may create. This from the man who less than twenty years earlier declared ornament to be criminal. Not heeding Loos’s warning, the Modern Movement soon reached its foreseeable intellectual conclusion.

The ornamentation cycle was complete in the early 1960's, just a little over 100 years from its published beginning with Owen Jones.
4 A Few Valuable Forms
The time was appropriate to re-orient the thesis. The purpose had at this point shifted to deciding exactly how and at what point to restart the cycle, a cycle similar to the one which had come to completion.

Following the pattern my thesis had developed based on historic research, it was decided that the starting point for the generation of new architectural style was logically nature. Interestingly, the re-examination of nature was already underway and may be seen in the works of the mislabeled Postmodern Movement, which began in the mid 1960's with the experimental works of Robert Venturi and Charles Moore. Today's examination of nature is taken quite clearly on the surface level, as is perhaps appropriate for a society of instant information and short attention spans. Contemporary architects are looking at color, shape and rhythm as opposed to the indepth examination of nature's organic structure of generations past.

This surface examination of nature, though, leads to an inherent emptiness compared to the richness available. To combat this emptiness with knowledge, the thesis decision was made that an appropriate point to restart the cycle of architectural style would be an investigation of the question "What is today known about nature that was unknown to Owen Jones and his contemporaries?"

The following investigation showed that what is now known about nature that was not known in early/mid nineteenth century came down to two aspects. The first aspect concerns the finalization of a list of basic geometries found in nature. These geometries include the sphere, polygon, spiral, helix, miander, and branch. Whereas generations before were assuming these truths, the present
generation has proven them so. Throughout nature, every form found—be it a snow flake, a leaf, or a riverbed—may be classified into one of the six geometry categories.

The second aspect concerns the detailed visual facts of plant growth and reproduction. These microscopic vegetational views reveal a world of seemingly continuous change, change that takes time. As the nineteenth century emphasized the finite geometry of static plant life, the thesis could apply the idea of "change through time" shown in nature to contemporary architecture.

The intended application of these discoveries would not try to start anew in a spontaneous developing of architecture. Learning from the positive aspects of historic architecture, particularly the recent Modern Movement, the thesis would integrate the historic knowledge into the "next step" while utilizing the list of finite geometries and the "change through time" ideal as guides or catalysts. With this in mind, the creation of a more valid, meaningful architecture could hopefully be formed.

I began this experimentation by creating small, quick architectural pieces with no specific function defined. The chart of six basic geometries was to dictate the overriding form of the architectural piece and the "change through time" idea was to influence particularly the interior. The thought was that the participant would act as the time element, moving through space to discover and create change. To add the historic element to the experimentation, which seemingly would be otherwise missing, the six basic geometries of nature were combined in a matrix form with the four classic rules of ornamentation, namely rotation, translation, reflection, and inversion as described by Owen Jones in his Grammar of Ornament.

What resulted by meshing these classic rules with the six geometries was mostly catastrophic. There were produced a few valuable forms (the spiral meshed with rotation proved the most effective), but the bulk of the results ended in unpleasantries of forced forms. The time element in these projects showed promise, but were handicapped by the forms in which they were housed.

Intellectually, this process had merit. The downfall, however, came in the emotional arena: the design-by-matrix-match method seemed to allow for little expression of emotional qualities. Designs were for the most part static and unfeeling. After much re-evaluation, this phase of experimentation was declared too binding and sterile of a process and was abandoned.
The matrix used as a guide to design. Ornamentation’s four basic visual manipulations listed across the top are combined with nature’s six primal geometries.

The example shows, in plan form, the meshing of nature’s spiral with ornamentation’s rotation principle. The base tear-drop form was repeatedly expanded and rotated to create the spiral effect.
In this project series, the participant acts as the time element, moving through space to discover and create change. The varying interior finishes help one realize the passing of immediate time.

Interior furnishings aid the participant in his awareness of the passing time. Here, regular additions to an established pattern of time-related art act as a calendar to cue the user of larger time spans.
5 The Generalities
Upon this re-evaluation, many valuable, new observations were made and conclusions reached. The most important of these was the re-examination of the research conducted during the beginning phase of thesis.

As stated before, I once believed that the dominant theme to be found in the accumulated information was that style and consequently ornamentation was derived from nature. However, by analyzing and comparing the total of information in hindsight I was able to see more clearly the actual message, a message that simply read "All form is geometry."

The two pieces of information that turned my head upon reconsideration were written basically at the beginning of the recognized cycle. One piece, written by Ruprich-Robert and published in the late 1850's, addressed the models for ornamentation. Although quoted previously, the writing bears repetition here.

Undoubtedly it will be noted that the plants reproduced in our drawings are not always strictly accurate anatomically. That was precisely our intention. We did not want to render nature faithfully. Monumental art, or the simple caprice of the ornamentalist, demands a certain convention. We have sometimes interpreted our subjects by making them symmetrical.

The other piece of re-examined information was most importantly written by Owen Jones himself. He wrote in his 1856
The Grammar of Ornament that nature and flowers in particular "should not be used as ornaments," rather they are merely conventional objects to express the thought "all form is geometry."

Both of these examples make the clear point that nature was only a vehicle through which to communicate the basic principles of geometry. In fact the experimentation of geometry, not nature per se, is what spurred generation after generation of architects onto the abstraction and purification of form.

This geometry in the abstraction of convenient nature may be seen throughout the entire "cycle" recognized earlier. Frank Lloyd Wright, always aware of nature, was a master of experimentation in geometry and this may, in part, explain his at times unpleasantancies of design during the last years of his life. While the established Modernists purified and confined themselves to the simple rectilinear form, Wright continued to experiment with virtually all geometries from the polygon to the helix. The Modernists' desire to refine only one form of geometry surly contributed to the movement's demise.

This new message of "all form is geometry" was quite frankly both surprising and disappointing, for it is a message of the obvious. But one of the more important findings of my research and thesis experimentation in general is that many of the practices or beliefs that I have developed through intuition, no matter how obvious, are supportable by fact or by precedent. This small fact in itself is, for me, able to justify the entire thesis process.

Along with the re-evaluation of information came the re-evaluation of self. As stated above, the design-by-matrix-match method seemed to allow for little expression of emotional qualities. This emotional deprivation, as it were, rested uneasily within myself. At this time the commitment was made to act more readily on emotions, using the historical knowledge acquired through the completed research as a general, not specific, design base from which to react.

With these ideas and discoveries grasped firmly, ready to be tested, an architectural project was now required.

The search for a particular building type which would allow experimentation appropriate to the thesis became important. The basic criteria for the searched type included a building "functionally suited" for the thesis of visual ornamentation, a program that would not be unnecessarily complex, and a building sized small enough to allow attention to specific details.

The building type eventually selected was a small museum or gallery; but more importantly, a gallery for the display of jewelry. This type was chosen because of its relatively straight-forward program; the notion of display, as architectural ornamentation is displayed; and the flexibility of the program to be tailored to virtually any city scale with ease. The display of jewelry was selected as a loose parallel to ornamentation: jewelry may be to the human body what ornamentation may be to a building.

The site selected was in New Harmony, Indiana. This location was chosen for I was partially familiar with the area in addition to the reputation of the town itself historically being the catalyst of experimentation; two experimental utopian societies created New Harmony in the first place. The more specific site is located on
Main Street, surrounded by Italianate commercial buildings of the 1880's as well as one bank in the Victorian Gothic style.

The basic building program consisted of the following:
- entry space
- display space for permanent jewelry acquisitions
- display space for traveling jewelry exhibitions
- display space for jewelry created in house
- studio space with appropriate equipment for the in house design and creation of jewelry
- office space for the managing of the gallery
- private receiving and storage area for exhibitions
- appropriate mechanical space

Two jewelry galleries were designed and presented: the first being more to test the generalities of the thesis ideas and to become familiar with the site, the second to refine the thesis ideas and to incorporate aspects that the first design would fall weak upon.

The first gallery design attempted to make the connection between the recent research component and an actual design project. Consequently, the design was mostly concerned with the newly established statement "all form is geometry." Perhaps overly so, again to the exclusion of emotion. Another important consideration was an understanding of the construction and creation of jewelry and transferring this knowledge to compliment the character of the gallery. Consideration was given to the details of jewelry
construction as compared to the details of building construction, particularly in the design of the facade.

The presentation of this project yielded many valuable comments from the jury. The most consistent comments addressed the issue of scale. A consensus was reached among all jurors that the scale of the facade was not appropriate for the context as well as there being too few scale clues for the pedestrian to read. One juror, asking for a re-evaluation, called the design a "beautiful object," but an "intervention" on the street. A few comments made reference to the predictability of the actual roof form, reinforcing the idea that the design was perhaps not as coherent as it could or should be. Other suggestions gave me clues as to the handling of the studio space in relation to the public spaces, and the list goes on.

The suggestion that carried a great deal of impact, though, came from a guest juror who questioned the details devised for the facade. That the details took their clue from jewelry was not at issue. The question focused on the idea of "active adornment" expressing its duty. On one specific claim, the juror contended that a detail along the central bay of the facade that was intended to hold two sections in place did not express the tension that would naturally occur. This detail should exaggerate itself to make the point clear to users what was actually happening, he believed.

His comments, but more his attitude, gave way for another re-evaluation of ornamentation and detail.

The first Jewelry Gallery facade. The major materials are marble, copper, and a translucent disk to make the allusion to jewelry. Note the metal straps binding the central copper bay the marble field.
Jewelry Gallery One in the New Harmony context.
A longitudinal building section. Display space occurs in the front half of the building on both the first and second levels. Artist space is located on the second level and is able to be accessed directly by visitors to the gallery. This space also has a private spiral stair into a storage area below.
The first level plan is created through the carving of space from the given solid of the lot. This area would display the gallery's permanent collection of jewelry. The back half of the building is concerned with storage and an office space.
The second level plan is created through the placement of objects in the given void of the lot. This second level area would display traveling exhibits hosted by the gallery. Again, the back half on this floor of the building is concerned with artist space and the creation of jewelry.
6 The Specifics
This final re-evaluation called on many resources established throughout the year. Ideas from research and experimentation meshed with those of the jury's and my own to give final direction.

A portion of the original research, as discussed in Chapter 2, dealt with the question of what exactly defined ornamentation. One source, A. D. F. Hamlin, recoiling from the not-so-modest claims of the propriety and the morality of ornamentation, commented on the subject circa 1920. He said, "Classification is not easy, and perhaps not important." Great weight is carried in so few words. What Hamlin implies is that the rigorous or dogmatic classification of ornamentation is at best difficult, and at worst detrimental to architecture. It seems, though, that ornament and its classification has carried the divorced-from attitude with structure or function for generations untold.

In 1791 Sir William Chambers wrote his *Treatise on the Decorative Part of Civil Architecture*. Chambers declared there to be two "principal constituent objects" in every architectural composition. First were the elements basic to construction, the essentials of building such as columns, walls, beams, and roofs. Second were the "subservient" members, devised for "the use and ornament of these (essentials), and intended either to support, to shelter, or to unite them gracefully together." Sir Chambers in this paper sets theoretical standards that will be followed in concept for almost two centuries. What he established in this overly simplified definition is: ornament is separate from structure, ornament is subservient to structure, and ornamental correctness serves the
"function" of unifying. It is peculiar and unfortunate to note that at
times today's description of ornament adopts a similar attitude.

The second portion of Hamlin's comment, "Classification is not
easy, and perhaps not important." reaches into the very core of the
ornamentational question. What Hamlin suggests here is that even if
one were able to easily codify architectural ornamentation--cutting
through linguistic devices of decoration--it perhaps would not be
wise. If ornament for the new age were rigidly classified, several
dangers could make themselves apparent.

One danger comes in the form of building illegibility. With a
dictated style of ornament and consequently architecture, a constraint
is placed on the visual expression of a building's function before the
true nature of the operations within or context about are investigated.
This danger has been realized as late as the early/mid 1980's as the
Postmodern Movement hit its popularity peak. The expected
pediment and "ceremonial" columns composed the standard facade
for schools, banks, and museums alike. Ornamentation, and
consequently architectural style, must be flexible enough to express
varying building functions.

Another obvious danger is that of mindless reproduction, a
pattern book of ornament to supply all the non-thinking answers.
This unfortunate state has been demonstrated by the misuse of Owen
Jones' The Grammar of Ornament. Creativity in this mind set
becomes limited, and original thinking may possibly be shunned.
This lesson we should have learned from the late Modernist period.
Ornament requires the ability to be tailored to individual projects.

The discussion now returns to the guest juror's comment
concerning the design of the first jewelry gallery. To this point, the
thesis had been engrossed in research and what seemed to be almost
random experimentation. Knowing confidently what direction to
avoid, no true vision as to which direction to actively pursue was
present. It was the juror's statement concerning "active adornment"
expressing its duty that opened a door. Soon thereafter in a studio
critique, my Thesis Committee Chair used a phrase to describe a
condition of detailing similar in mind set to the "active adornment"
that the thesis strived for. This phrase, "artful detailing,"
embraced the thesis ultimately desired: it unified the
separated ideas of ornament and structure, retained the ability for
ornament to be flexible enough to express varying building
functions, retained the ability for ornament to be tailored to
individual projects, and defies the mindless reproduction of
meaningless ornament.

The concept of Artful Detailing is multi-layered. At its most
obvious, artful detailing is concerned with the actual joinery of
materials, the craft and consideration given to the union of two
pieces. This detail may be as simple as a single screw, or as
complex as cable, turn buckles, and metal plates binding an element
into place. The important issue at this level is honesty--handling
the physical condition sensibly while keeping the visual art in mind.
Construction convention becomes a guide, not the answer, from
which to design artfully.

Artful Detailing at another level concerns material selections, a
choice that transcends mere durability. Artful Detailing asks what,
beyond the actual physical properties, messages each material carries, what emotions the material conveys. It allows materials with great emotional quality, such as brick, to carry an additional meaning tailored to the properties of the material and the specific project. This may be done in a manner, for example, such as denotative brick patterns.

And Artful Detailing at yet another level looks at the architecture's overall massing language. Obviously it is not enough to design a floor plan and simply project it upward to create a building, for the exterior massing and silhouettes carry messages. It is the artful detailing and manipulation of the messages carried by these forms (and materials) that make a specific piece of architecture legible. This level of Artful Detailing may express from the exterior everything from public entry to the division of minute spaces within to give the potential user clues of interior circulation and use. In this same manner, big-scale ornament makes cities legible and usable.

The attitude that Artful Detailing seems to strive for is one that was last practiced during the Renaissance. Renaissance architecture had little concept of what was ornament and what was not, for ornament was not an object super-added to utility. Ornamentation was form, not appliqué. The straight-forward attitude was of emotional wholes, not parts allowing wall to be ornament and ornament to be wall. At once.

This attitude of unity meshed with the many levels of Artful Detailing discussed above are the concepts that were combined with the creation of jewelry to guide my final architectural project of a Jewelry Gallery.
The facade for Jewelry Gallery Two. The major materials are brick, limestone, glass, and copper to stay in a contextual pallet of finishes. This design respects the pattern of the context (three-bay facade, entry at center) while manipulating the rules to its advantage (for example, the asymmetry).
With further context research, it was discovered that the building to the site's west occupied only a portion of its lot, leaving the thesis site an advantageous exterior western wall. This elevation may be easily seen from the cross street. To take advantage of this opportunity and capture the sun as an indicator of daily time (a goal sought in the earlier experimentation—see page 29), a large stained glass disk (a refined form of the was located to the direction of through the day toward its de emerald and turquoise pattern walls and floors. As well as ins light pattern could orient one ins
The longitudinal building section shows the basic organization of the design. As in the last gallery design, display space occurs on two levels towards the front with the artist space and service areas to the back. The primary organizing element is the structural system, exploiting the idea of a new building being "set into" the existing context. The entire roof system is supported by four free-standing columns, placed on the lot as a table might be placed, engaging the existing structures only to weather the interior houses, as in Gallery and supports above an object-oriented rear contains the private service studio space.
The first level plan shows the entry at the central bay of the facade, but has it unexpectedly turned by 90 degrees. The front entry space serves to orient the visitor to the gallery, for the open design allows one many vistas to many areas. The visitor may enter the lower gallery of permanent exhibition by crossing under the main stair. The display spaces on this level feed into a large semicircular space designed to contain the glass disk. The private service at the rear is housed in the box is storage for the restrooms and a door exposed to the public.
The second level plan shows the table tops and their objects. One may note that the tables do not touch the existing building's side walls in order to dramatize the "set in" effect discussed earlier. The front table holds four permanent display cases and has the capability of holding several additional temporary display units to facilitate traveling exhibitions of various sizes. In the area will also be displayed jewelry for sale created at the in-house studio. The studio, as mentioned before, is Different from Gallery One, Gall by the public. This separation potentially utilized by the artists is created by pushing the strong building to the east for a heighten
Section detail. This drawing shows the relationship between the display booths of the first level and the permanent display cases of the second. A light well connects the two levels, allowing a filtering of light from the directly lit display cases above into the darker booths below.
As stated in the abstract, the thesis process has ended in an obvious, yet assuring, conclusion which designers have known for centuries. The idea of Artful Detailing carries with it much intellectual and emotional quality. But most importantly, Artful Detailing concerns itself with the common sense appropriate to a situation, a quality often times forgotten.


Jensen, Robert and Conway, Patricia. *Ornamentalism* 1982


