A TOWER FOR LOUISVILLE

THE HUMANA COMPETITION

A LATE SUBMISSION

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THESIS STATEMENT

TO RECREATE A STATE OF THE ART PIECE OF ARCHITECTURE AND EXPRESS IT AS AN ART FORM OF NATIONAL SIGNIFICANCE
Introduction

Not since the landmark Chicago Tribune Tower competition made high rise history over six decades ago had there been an attempt to create a piece of architecture with such national and international significance. Unlike the Tribune competition, which drew over 400 open entries from around the world (many of them young, unknown architects), Humana screened, interviewed and selected five distinguished firms over a several month period in 1982. The five firms selected by Humana to submit a solution for the competition were: Cesar Pelli & Associates, Ulrich Franzen / Keith Kroeger & Associates, Murphy / Jahn Associates, Foster Associates and Michael Graves Architects who's entry was selected as the winning design. (See appendix) His winning entry approached the design criteria from an extraordinary angle by developing forms that are distinctly Graves own. The design is truly post modern, suggesting strong historical imagery using balcony, pilasters and earth tone colors. A public loggia that faces Main Street re-establishes the human scale to the city which was in danger of becoming extinct. Modernism is completely abandoned and is replaced with a sense of romantic classicism unlike the other four entries.

Cesar Pelli's submission emerges from the site like a free standing prismatic octagon terminated by a stainless steel capital. Murphy / Jahn Associates and Foster Associates entries take on Russian Constructivist imagery. Jahn's design directly recalls Vladimir Tatlin's Monument for the Third International of 1920 with its giant ascending metallic trusses and glass spiral. Fosters futuristic design represents a flamboyant imagery with state of the art technology utilizing a exterior structural mesh, and a transparent vertical transportation and communication tower attached to the main circular body. The last entry, and perhaps the least successful design by Ulrich Franzen / Keith Kroegen &
Michigan Avenue Elevation

Michigan Avenue Elevation Associates follows a more eclectic imagery, closely following traditional and modern forms of design.

Like the Chicago Tribune competition, the Humana competition came at a threshold of radical transition in architectural thinking and theory. Thrown out is the typology of the urban steel and glass box high rise. Modern advances in computer aided designs, materials and state of the art construction techniques present new opportunities toward fresh visions in architectural design competitions.

Similar to the Tribune competition, it was Humanas desire for a singular skyscraper expressing artistic qualities while at the same time responding to its private needs.

Sixty years after the Tribune competition and seven years after the original Humana competition was held, that same revolutionary transition is still occurring with changes in imagery and form.

INTRODUCTION
The Humana Corporation is a hospital management company headquartered in Louisville, Kentucky. Humana is one of the three largest hospital management companies in the United States that control several medical facilities located in various states. Since its formation several years ago, Humana's corporate offices were located in three separate downtown Louisville office buildings and in one suburban location. In July, 1981, Humana Incorporated purchased a .81 acre vacant lot on the northeast corner of Fifth and Main Streets, which is considered to be one of the most important sites in the downtown area. With a 50 million dollar budget, it became Humana's objective to consolidate its four separate corporate offices into one high rise building. The initial design criteria called for space requirements to accommodate over 750 corporate employees plus the flexibility to respond for future expansions. While meeting the requirements for its private needs, the public was addressed as well. Humana seized the opportunity to create an image that would enhance the overall visual Louisville skyline while creating excitement and stimulating the imagination of the public.
Louisville

The site that was to become Louisville was first discovered by famed explorer LaSalle in 1669. In his expedition, he described a series of waterfalls where the Ohio River descends 26 feet in about 3 miles. Today it is regarded as the Falls of the Ohio where Kentucky and Indiana are separated.

The first known settlements were established in 1778 by George Rogers Clark on a small island just above the falls. Clark brought 20 English, Scottish and Irish families and 120 soldiers to the island and set up a base for military operations. Soon thereafter, settlements prospered and spread to the mainland where forts and cabins were constructed.

Louisville was officially named in 1780 after Louis XVI of France for his efforts in aiding America during the Revolutionary War. Because the falls were impassable by steamboat, cargo and people were put ashore and transported by land to another boat waiting just below the falls. This made Louisville the only riverport city between Pittsburgh and New Orleans and the town rapidly increased in size and population. Construction of the railroad and increased traffic on the Ohio river created the nickname "The Gateway to the South."

In early May of 1875, Louisville held the first Kentucky Derby at Churchill Downs. Today, the Derby is considered the most famous horse race in the world and is marked as the cities most prestigious and celebrated annual event.
As metropolitan Louisville grew during the 19th century, the city was laid out in a north-south oriented gridiron plan. Along the waterfront of the Ohio River, rows of cast-iron facade mercantile businesses were constructed establishing the business district. Just outside of this area, a variety of residential neighborhoods began to emerge. Large, single family Victorian houses were constructed in an area now known as "Old Louisville" where they still stand on tree-lined streets. Germantown became a suburb known for its
well kept small houses and tidy green lawns. Another suburb of Louisville is Portland which was developed near the river and is famed for its narrow white wood framed houses.

During the early 1970's, Louisville became a mixture of rich and varied architecture. A massive redevelopment program of the riverfront was implemented which resulted in the construction of several examples of International style architecture. These buildings currently surround the present Humana site.

Louisville has long been affiliated with the arts and annually hold a fund drive that benefits the Kentucky Opera Association, The Louisville Orchestra, The Louisville Civic Ballet, and the Actors Theatre, all which operate in the vicinity of the Humana site.

Today, Louisville is the largest city in Kentucky and is the seat of Jefferson County with a total population of 881,100 people. It is also a major industrial center that produces a wide variety of products including whiskey, household appliances, trucks, automobiles, and the famed Louisville Slugger baseball bats. Tourism also plays an important role in the economy. The Kentucky Derby, The Kentucky Fair, conventions and The Bell of Louisville, which is an old stern-wheel steamboat that make pleasure trips on the Ohio bring droves of tourist to Louisville each year.
LOUISVILLE FIRST SKYSCRAPER LOCATED ON THE PRESENT HUMANA SITE (DEMOLISHED)
Maximum Gross Area
450,000 square feet.

Proposed Net Area
360,000 square feet.

Outline of Space Allocation
Retail Lease Space includes small retail shops and services such as drugstore, hair stylist, travel agent, tobacco shop, branch bank, gift shop and bar.
Subtotal: 6,000 s.f.

The public space includes plaza level circulation, entrances, lobby, security and information.
Subtotal: 4,000 s.f.

The health and fitness center includes reception, changing rooms, sauna, steam rooms, showers, exercise areas, running track (250+ 1.f.), (2) raquetball courts and (2) squash courts.
Subtotal: 6,000 s.f.
Humana Space

Zone A:
Hospital Accounting (11,000); Corporate Accounting (5,000); Tax Dept. (4,000); Third Party Reimbursement (7,500); Treasurer and Finance (5,000); Budgeting (1,500).
Subtotal: 34,000 n.s.f.

Zone B:
Law Department (5,500); Internal Audit (4,000); Corporate Secretary (1,800).
Subtotal: 11,300 n.s.f.

Zone C:
Marketing Departments
Subtotal: 13,000 n.s.f.

Zone D:
Personnel (4,000); Travel (600); Office Services (3,000); Employee Relations (2,100); Employee Benefits (4,200); Professional Relations (2,400); Insurance (3,300); Nursing Administration (600).
Subtotal: 20,200 n.s.f.

Zone E:
Process Management (3,300); Management Engineering (2,500); Hospital Division Planning (1,400).
Subtotal: 7,200 n.s.f.

Zone F:
Purchasing (6,600); Construction (14,200); Real Estate (1,800); Telecommunications (1,500); New Hospital Development (3,200); Business Planning (2,500); Development (2,600).
Subtotal: 32,400 n.s.f.
The Humana space should be located on the lower floors of the building, with the executive offices no higher than 100 feet above the street level. Relationships of Humana formational areas are as noted below.

Cafeteria and Kitchen: Subtotal: 3,500 n.s.f.
Retrieval Storage: Subtotal: 14,800 n.s.f.
Auditorium: Subtotal: 2,200 n.s.f.
Subtotal: 198,000 s.f.
Tenant space to be leased to other tenants. Future Humana expansion.
Subtotal: 146,000 s.f.
Support Space or Unassignable: Mechanical, electrical and plumbing spaces; elevators; circulation and exterior walls, penthouse, telephone equipment, etc.
Subtotal: 77,500 s.f.
Core services on each office floor including toilets (360); custodial space (24); telephone panel (16).
Subtotal: 12,000 s.f.
Loading dock and Receiving Area.
Subtotal: 500 s.f.
Subtotal: 90,000 s.f.
The Plaza level must be within 3 ± feet of existing street level.

With the exception of a small drop-off lane, all parking must be below the Plaza level.

Retail space should be located on or near the Plaza level.

The tenant space will occupy the upper floors and will also be used for Humana future expansion.

Location of the Health Center is optional. The game courts will require greater volume than normal floor-to-floor dimensions.

Floor Configuration
Non-enclosed space on Plaza level will not count as programmed space.
Floors accommodating Humana space or tenant space must have at least 12,000 square feet (net) and no more than 16,000 square feet (net) on each level.
Floor sizes may vary. Floor-to-floor dimensions should be based upon structural system selected allowing for an interior floor-to-ceiling dimension of not less than 8'-6" on standard office floors.

Elevator Capacity
(9 or 10) passenger elevators.
(1) service elevator.
Passenger elevators may be zoned.

Access and Parking
Access to parking levels below grade may be from Main Street (one way westbound) or from Fifth Street (one way northbound). The maximum depth of sub-grade parking is approximately 30 feet below street level. Desired parking capacity is 180 cars including five handicapped spaces. Minimum vertical clearance is seven feet, and access must provide for in/out control.

Parking, parking support, circulation and delivery access space will not count as programmed space.
Access for delivery vehicles may be provided from the alley which forms the southern boundary of the site. Alternatively, delivery access could also be from Main Street or Fifth Street leading to a sub-grade loading facility. The location of the loading dock (3 trucks) is optional.
The Site

Location
The 0.81 acre site is located on the northeast corner of the block bounded by Fifth, Sixth, Main and Market Streets. Main Street is one way westbound; Fifth Street is one way northbound. This area of the downtown, near the Ohio Riverfront, was first developed in the early 1970's. The Louisville Central Business District extends from this area to Broadway which is approximately six blocks south of Main Street.

The Block
At one time the City had plans for a large multi-use development for the entire block which includes the site. Some of this development was related to the new Performing Arts Center. Those plans have been dropped; however, it is assumed that other public or private development will eventually take place. The store front buildings on Main Street will be preserved—as will the building on the southwest and the building on the southeast corner of the block. The eight-story Avery Building on Market Street in the center of the block is under construction and approximately 50% complete. It may be possible to close a portion of the alley which forms the southernmost boundary of the site.

Topography
The site is currently maintained as a paved parking lot. There is less than one foot of relief across the entire parking surface.

Neighbors
To the north, across Main Street, is the site of the proposed Kentucky Center for the Arts, now under construction. This facility will include a 2,400 seat concert hall and 610 seat theater. Between the Arts Center and the Ohio River is the Riverfront Plaza with underground parking for 1,300 cars.

To the east, across Fifth Street, is the 40-story First National Bank Building and associated parking garage. Actors Theatre of Kentucky is located in the second block on the south side of Main Street.

To the south, in the second block is the 29-story Citizens Fidelity Bank Plaza. City Hall and the County Courthouse are located in that general area. The area between Third and Fifth Streets and Jefferson and Chestnut Streets is the site of the new Galleria Development now under construction. This is a combination of new construction and renovation to provide both retail and office space.

To the west, on Main Street, is a series of narrow three, four and five floor mercantile buildings with cast iron and stone ornament which are protected by historic preservation. Many of these buildings have been or are in the process of renovation for office and retail use.
FIFTH STREET-ONE WAY EAST BOUND
MINOR TRAFFIC
ACCESS TO UNDERGROUND PARKING
TWO WAY TRAFFIC
MAIN STREET-ONE WAY WEST BOUND
MODERATE TRAFFIC
POSSIBLE DROP OFF ZONE
STREET LIGHTS
ALLEY ACCESS FOR SERVICE VEHICLES,
UNDERGROUND PARKING AND LOADING DOCK
FIFTH STREET-ONE WAY EAST BOUND
MINOR TRAFFIC
CIRCULATION
PRIMARY PEDESTRIAN TRAFFIC FROM
UNDERGROUND PARKING GARAGE
SECONDARY PEDESTRIAN TRAFFIC
VIEWS INTO SITE

1. View from Main and Fifth Streets
2. View from Greater Louisville
3. View from Residential Neighborhoods
4. View from Ohio River & Riverfront Plaza
5. View from Across Ohio River, Bridges, Expressway

VIEWS FROM SITE

1. View of Kentucky Center for the Arts, Riverfront Plaza, Ohio River, and Indiana.
2. View of Bridges
3. View of the 40 Story First National Bank Parking Garage and the Actors Theatre of Kentucky
4. View of 29 Story Citizens Fidelity Bank Plaza, City Hall, County Courthouse
5. View of Residential Neighborhoods
THE SITE IS A CORNER LOT
THE TOWER MUST RESPOND TO THE CORNER

THE TOWER MUST VISUALLY COMMUNICATE WITH THE CITY OF LOUISVILLE
IT MUST ENHANCE THE SKYLINE
IT MUST RESPOND TO THE OHIO RIVER

THE TOWER MUST READ AGAINST THE DARK SLAB 40 STORY FIRST NATIONAL BANK BUILDING TO THE EAST

MICROWAVE, TELEVISION AND COMMUNICATION MAST LINKING ALL HUMANA HOSPITALS TOGETHER

HELIPAD ON THE ROOF-PART OF TRANSPORTATION NETWORK
STEP BACK ADDRESSES THE URBAN CONTEXT

STREET EDGE ADDRESSES THE PUBLIC

VISUAL INTERACTION BETWEEN INTERIOR & EXTERIOR

GARDEN & FOUNTAIN
Comparison of morphological types of tall buildings.
The Russian constructivist movement was first influenced by Kazimir Malevich, whose early cubism paintings evolved into his own innovation called Suprematism. Shortly thereafter, Vladimir Tatlin, who was influenced by the tenets of cubism and futurism, initiated and founded the constructive movement with painting reliefs of abstract geometric constructions. Tatlin's most famous work was the model for a Monument to the Third International which shows his concern with the dynamic interaction between form and space. Antoine Pevsner and Naum Gabo joined Tatlin and his followers in Moscow, and upon publication of their jointly written Realist Manifesto in 1920, they became the official spokesmen of the constructivist movement. The word "constructivism" was derived from "to construct" art and architecture. They had a great admiration for machines, technology, Functionalist, and modern industrial materials such as glass, plastic and steel. The theory of nature was put aside and the purity and form of the aesthetic quality of a form generating machine was implemented to produce a functionalist style image. They theorized that the machine was an organizational prototype and strived for monumental and functional architecture. Pure simple forms were radically placed together—interlocking and conflicting with one another, producing high levels of energy and tension in their compositions.

Constructivism also has its roots in social evolution. Form in architecture was influenced by changes in life, new economic priorities and new technology which came with the Russian Revolution in 1917.

Recalling the constructivist movement is deconstructivism which actually represents no movement at all, but new challenges in harmony, unity and stability, suggesting a different view of the structure in a new way. Deconstructivism is not the disassembling of constructions, but it is a deviation from structural order, unity and purity. The forms become disturbed, distorted and skewed by informal geometries. The deconstructivist conflict between forms now becomes internal, creating disturbances and contortion within.
Classes of constructive solution

The wealth of forms in general and the diversity of possible combinations of different elements make the range of possible constructive solutions infinitely great. This does not at all ease the task of classifying constructions by types, given the lack of precision pervading this whole issue. However, we can classify constructive solutions according to their generally dominating properties. On this basis, we can distinguish the following general types:

1. Combination

A combination usually comprises elements which can come together without violating each other. In combining one body with another we study the particular characteristics of each, and if there are factors impeding their combination, these will represent a serious obstacle to executing the combination at all. The form and configuration of the elements themselves may provide obstacles. So too may their positions in relation to the surrounding space. In combining one element to another we are pursuing harmony. The very unity of the composition depends upon the fact that no antipathetic elements are present.

Combination often requires 'third parties', elements that serve to unify the rest.

2. Amalgamation

Amalgamation of forms can occur by bringing together either identical elements, or different variants of the same element.

Amalgamation also includes the case when we receive the impression of a constructive solution simply by skillfully 'putting together' components without making any real constructive connections.
Assemblage

Assemblage can be characterised by the constructive look which finds particular reflection in the machine. The elements maintain their separate identities whilst being grouped into one whole. The principle of assemblage also implies that only a certain combination of specific parts is capable of creating the required solution; the absence of any one part may prevent the task being solved. As a result, the structure of the composition is often visually evident. Each component part in such an assemblage requires careful attention since only the absolute fit of parts is capable of producing the required effect. The designer has to give formal coherence to the parts of an assemblage as well as functional cohesion.

Conjugation

Conjugation is the phenomenon which permits a transition from one condition of a form to another: or from one variant of a form into another. When the forms are lines, the task is fairly simple, though still interesting. When we conjugate complex objects, the task is both richer and more complicated. The integrity and constructive properties of the composition must be preserved in the transition.

Conjugation of elements is one of the most powerful tools the designer possesses, since it permits him to achieve those complex transformations which his inventive capacity dictates. By conjugation we can move freely from a configuration of one kind to a new configuration of quite another type, moving not only painlessly, but also rationally and meaningfully. The conjugation of elements occupies a large place in the life of every individual in his various forms of creativity, and we must pay it the maximum of attention.

A composition successfully derived by conjugation acquires dynamic properties from the fluency of the transitions.
Harmony: new anti-classical principles

Lev Tolstoi regarded art as that activity through which one person consciously transmits, through certain eternal signs, the feelings he has experienced, and other people are infected by those feelings, which influence their lives. In this definition there is already a clear conception of the great social mission of art. Art socializes human feelings, unifies the vast multitude of consumers of it on the basis of a collaborative living experience, on the basis of the 'infectiousness' of the beautiful.

Equally important to a correct understanding of the nature of art and the essence of the beautiful are the views developed by Marx, as the first to see art as part of the superstructure of the economic base, and those others who endorsed the materialist analysis of the history of art.

The conception of beauty in our time is not determined by the cost of materials, not by their richness and variety, but by the compositional and constructive appropriateness, or by the expressiveness, level of resolution and formal consistency with which the final object manifests its function and social purpose.

Even an industrial building must attempt to be beautiful, as well as pleasant, convenient, light and joyful. Any worker can work better amidst the very best combination of surrounding walls and ceilings. Coming to the factory, or leaving it, the worker must perceive an interaction of exterior forms that helps raise his mood, and stimulate him to life, work and creativity. The enjoyment of beauty will become an inalienable property and condition of existence of the individual.

Thus the architect is required to create an object that answers aesthetic concerns and the requirements of convenience to an identical degree, and gives a clear visual answer to both.

Classical aesthetics as historically developed were based upon:
1 enforced symmetry of structure
2 the rhythm of simple repetition
3 combination of different component elements on universally 'beautiful' principles
The first two of these compositional principles are too partial to serve as a basis for us. We have to look to other sources of formal harmony. Many such principles were present in classical work, but hidden. Their elucidation is amongst the most interesting of our present tasks, the main ones being:

1. **Free Asymmetry in the Assembly of the Elements on Functional Principles**
2. **The Minimum Use of Simple Repetitive Rhythms and their Replacement by the Rhythm of Dynamic Diversified Combinations**
3. **The Harmonic Interrelationship of the Component Elements by the Subtle Proportions of their Vertical and Horizontal Dimensions**
4. **Adjustment of the Tonal Force of Component Elements in accordance with the Impressions Sought of the Viewer**
5. **Maximally Expressive Use of Colour Effects to Manifest the Constructive and Other Characteristics of the Planes and Surfaces Being Treated.**

These are the rules which must be the basis of the new harmonies.

Through appropriate training in these compositional fundamentals we must nurture in ourselves the most precisely tuned feelings for combining all the component elements of a form.

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**Force in Constructions**

The two concepts of **Force** and **Construction** are inseparably connected.

Construction is inconceivable without the presence of force. They complement each other functionally, but in various different ways.

1. **Force Expended in the Jointing Process**
2. Certain forms of constructive joint cannot occur without the application of a specific level of force being applied. Thus, in the COUPLING of parts we exert the LOWEST level of force. The PENETRATION of one element into another requires a SECOND LEVEL of force to be applied. In EMBRACING and the CLAMPING of one part by another we see the THIRD LEVEL of force.
2 Force as the action of weight

Force is present in constructive compositions when we observe the action of weight or heaviness in a specific part of the whole assembled object.

3 The force of influence

This force is measured by the strength of the impression which the constructive product makes upon each of us. The longer that impression remains in our consciousness, the stronger the force of influence.

4 The force of dynamics

The dynamics manifested as movement in a constructive composition represent a subtle but powerful union of complex phenomena, operating in a coordinated way upon our psyche and giving us the possibility to feel a higher form of emotional sensation.

Constructiveness as a high level of creative energy

Every person is endowed with the feeling for the CONSTRUCTIVE. But that feeling expresses itself in the most diverse ways and in different intensities.

There are sudden moments of constructive inspiration, when new solutions and new ideas flow extremely rapidly in our creations. The force of the energy in these valuable moments can be measured only by the real results that follow.

In contrast, there are depressive moments, when we lack any feeling for construction, and when the desire to resolve a problem constructively has atrophied. Then we desire to create more PEACEFUL compositions - compositions that are less demanding to formulate, than a constructive composition. In such cases we enter into the stream of as-it-were 'minimum consumption' of constructive principles, and we ignore the constructive possibilities.

This coincides with a LOWERING OF CREATIVE ENERGY but it can also be an appropriate creative response in certain situations.

It is necessary therefore to recognise the unarguable fact that the act of CONSTRUCTION must be regarded as a complex and powerful experience.
On the basis of what has been said above, we can propose the following hierarchy of feelings for the constructive:

1. Higher moments of individual inspiration with its maximum tension.

2. Commonplace, everyday experiences, in accordance with the given requirements and solutions.

3. The depressive condition, as a result of which other approaches to designing an object will be pursued.

4. An indifferent attitude to the questions of constructivism and as a result an atrophying of the feeling for constructiveness.

5. Absolute non-comprehension of the very nature of constructive principles and, as a result, a complete ignoring of this approach to design in all situations regardless of their characteristics.

Not every task can be solved constructively, and we must never ARTIFICIALLY IMPOSE constructive forms in our creative work.

Functionality and legitimacy

The things that can be unified on the basis of constructive principles may be both material and non-material, but they are always subject to the recording action of our brain by means of SIGHT, HEARING and TOUCH.

Every new construction is a result of a human being's INVESTIGATIONS, and of his requirement to be inventive and creative.

Functionality means that every aspect of the real forms and their interconnections derives from the actions which have given birth to that form.

Every constructive solution must have a MOTIVE on the basis of which the construction is made.

Every constructive composition must fulfill its IDEOLOGY and reflect the TOTALITY of the idea underlying it.

Every construction is a construction ONLY when the unification of those elements in that way can be rationally JUSTIFIED.

The greater the RATIONALITY in a construction, the more valuable it is; in other words, the significance of constructivism lies in its RATIONALITY.
Legitimacy in all constructive opravdannost' structures depends upon our being simultaneously able to prove the TRUTH and CORRECTNESS of the chosen solution BY ANALYTICAL MEANS. The form we have devised is LEGITIMATE to the extent that it is JUSTIFIABLE.

In all design we face the necessity of giving foundations to, and thereby as it were legitimising the construction that we have finally adopted. We must prove that the construction which we are proposing is correct and fits the case concerned.

The harmony of colours

Rhythmic movements of space and volumes can be augmented by colour harmonies. The coordination of colour with the formal rhythm, and the use of colour itself as a rhythmic device, are always important, but especially so in interiors, and in large urban ensembles. The colour impression produced by a given building may be influenced by

1. the factural treatment of natural materials, whose diversity can be further enriched by skillful selection of surface treatments

2. applied colours, such as paints, where an infinite diversity of colour combinations are possible for strengthening the architect's concept

3. selected combinations of technologically produced materials such as concrete, glass, steel. These are giving the contemporary designer new tools for formal composition and expression and hence creating whole new types of rhythm and harmony.

Different colour harmonies produce radically different effects. Examples show that dark brown, dark red, dark grey and black will produce the impression of a dirty heavy building that is dirty and heavy. They give 'weight' and monumentality, whereas green, yellow, sky-blue, light-grey, and white, give a building a cheerful, light and invigorating look. By fragmentation of colours we approach that polychrome decorativeness characteristic of architecture in the East, the Ancient World and the Middle Ages.
Harmonic planning of a building's colours may do the following:
- convey lightness or heaviness
- create a gloomy or cheerful atmosphere
- give unity or fragmentedness
- underline or distract from selected formal characteristics of the building or its components
- suppress dominating or protruding masses or bring forward recessive ones
- enhance the illumination of internal accommodation
- create some particular atmosphere through decorative effects on the planes and volumes of the mass.

In order to learn the mastery of combining colours in architectural constructions, it is necessary to develop a familiarity with the fundamentals of harmonic colour composition in spatial structures through colouring constructive, non-objective compositions.

Thus we execute a series of special exercises in so-called 'coloured ornaments', each requiring the student to obtain a specific effect of colour on some geometrical figure or a graphic construction he has already created in his study of form.

The simple name of a colour says nothing about what tones or 'gradations' of hue it possesses. 'Red' may mean vermillion, red ochre, carmine and all the other so-called 'red' colours. We know equally many 'yellow' colours: light ochre, ochre, cadmium, lemon yellow, light and dark chrome and so on. We have to study a colour in all its various gradations and tones.

Thus we take for example a series of planes in a compact constructive composition and fully harmonic relationship. The planes are to be coloured either with different gradations of a single colour, or in multi-coloured combinations. The colouring itself can be applied in different ways, overall, 'from the corners'; as dense or transparent colour.

Then we make it a rule that every architectural fantasy must be turned into a coloured image, given perhaps a minimum number of colours or paints, creating harmony by the selection of the actual colours, their strength and their tonality.
Rhythm in constructions

In the old aesthetics, rhythm was any periodic movement or regular repetition of elements.

The new aesthetic uses rhythm of a different kind, 'of a higher order', rooted in subtler harmonies constructed from:

1. relations of overall masses
2. mutual interlinking of weight of parts
3. appropriate 'percussiveness' of individual contiguous parts
4. general coordination of elements of a highly colouredness
5. generalised advancement of general dominating impression
6. tonal deviations, (above and below the general base) of the component elements
7. regular shifts in the whole side (forward, back, left, right etc.) of component elements

The rhythm inherent to music is kinetic, and clearly manifest. By contrast, rhythm is embodied in depictive art through principles of latent dynamics. These must operate at the level of the art-work's basic properties, which are of 4 types:

- Spatial
- Motor
- Compositional
- Formal

Rhythm must therefore be examined in relation to each of these, through the following questions:

1. How is rhythm distributed in space?
2. What motor character does the movement have?
   The motor characteristics of rhythm are:
   - Height
   - Extension (width and depth)
   - Direction
   - Form
   - Impression
   - Movement
   - Consistency or sequentialness
   - Speed
   - Force
   - Reaction

   The 4 directions of rhythmic movement communicate the following ideas:
   (a) horizontal movement forward expresses feeling
   (b) horizontal movement sideways expresses will and influence
   (c) vertical movement upwards represents thought
   (d) vertical movement in depth represents confidence

3. By what compositional means is the result being sought?

4. How are formal means applied to obtain the required effect?

In constructive design, rhythm will be a property of the composition's constructive elements, not its decorative ones.

Many perceptual aspects of constructive rhythm do not submit to speculative analysis. Our task is to elucidate relevant factors empirically.

Without pretending to be exhaustive, we can identify the following types of constructive rhythm:

1. Percussive rhythm
   in which either: identical forms repeat themselves regularly

or: regular gestures involve different forms, configurations or displacements
2 Rhythm of vertical or horizontal transitions
in which non-identical, variously spaced elements create a harmonic pattern of either:
ascending and descending

or: advancing and distancing

3 Rhythm of stable linkages
in which constructively linked parts move in coordination against a fixed and stable base.

4 Rhythm of heaviness
in which constructively combined masses are piled up so that they overwhelm their bearing. The totality may be stable or unstable, according to the psychological effect desired. This rhythm is often the basis of monumentality.

5 Rhythm of stratification
created when we are assembling elements that are all either horizontally recumbent or vertically standing, within certain extended ratios of height to length.

6 Rhythm of expansive curvature
when the aspirational character of individual curvilinear forms is coordinated into a single dynamic

7 Rhythm of load-bearing moments
through a harmonic relationship of the loads being carried by constructive bearing members and the spatial configuration in which they act.
In the article, "The End of the Classical," Peter Eisenman argues for a method of creating architectural that does away with functional or aesthetic origins. Neither the technique of the modernist nor that of the classicist will do. In order to inject new meaning into architecture, one must begin excavating beneath to an entire archeological wealth of forms. There must be an "end to the beginning points" as well as an abolishment of all end points. The arbitrariness of these "classical" ideas are thereby acknowledged. To accomplish this he proposes the development of a form, a simulacrum, or in his words, a "graft" that can be juxtaposed onto the site, a context, or a "text". The user becomes the interpreter of the new meaning by "reading" the placement of the "graft" onto the "text".

Chris Bergum
Brief History of High Rise Construction

280 B.C. Light house of the Pharoas at the mouth of the Nile River. 360-600 ft. Tallest masonry structure known to have existed.

Uncovered Roman ruins have indicated the existence of 100 ft. tall masonry apartments.

1891 A.D. Monadock Building, Chicago. Last of the empirically designed high rise masonry buildings. 14 ft. masonry walls at the base.

1843 Light House- Long Island. First wrought iron frame.

1850's Wide spread use of cast iron columns and wrought iron beams.

1885 Home Insurance Building- First building to use steel beams.

1889 Rand McNally Building- Chicago. First all steel building.

1913 End of the use of cast iron columns.

1931 Empire State Building- New York. 102 stories.

PRESENT John Hancock Building- Chicago. 100 stories.

Sears Tower- Chicago. 120 stories.


Bogata, Columbia- 70 story, 813 ft. reinforced concrete frame building.
Contrary to popular belief in the United States, two of the most major earthquakes did not occur in California or Alaska, but in the East and the Midwest. In 1886, Charleston, South Carolina was rocked by a series of strong earthquakes that partially destroyed the town. Even more severe was the New Madrid, Missouri earthquakes in 1811-1812, which is regarded as the most serious series of earthquakes in United States history. The 8+ quake was felt from Canada to New Orleans to the Atlantic Coast. Severe after shocks followed on a daily bases for more than a year.

Because Kentucky is in the vicinity of both Missouri and the Carolinas, about one quarter of the state is in the zone 3 category. Zone 2 covers another quarter of the state which includes Louisville.
ALLOWABLE RESULTANT WIND PRESSURES

COMBINED INWARD AND OUTWARD PRESSURES ON EXTERIOR SURFACES OF ORDINARY SQUARE BUILDINGS AT 30 FEET ABOVE GROUND 90°' 60°' 30°' N 0°' S

NORTHERN WINTER WIND

PREVAILING WEST WINDS
BIBLIOGRAPHY


The site that was to become Louisville was first discovered by the French during the 1720s. The Falls of the Ohio, located at the confluence of the Ohio and Indiana rivers, attracted various early settlers such as the French, British, and Indians. The area was significant for trade and transportation, as it served as a natural barrier and a junction for traders and settlers.

In 1774, a treaty was signed with the Cherokee people, allowing the British to use the area for trade. This treaty was significant as it opened up the region for further exploration and settlement. The Falls of the Ohio played a crucial role in the commerce of the region, serving as a hub for the trade of furs and other goods.

The early 1800s saw the establishment of the Louisville and Portland Canal, which connected Louisville to the Ohio River and the port of Cincinnati. This canal played a vital role in the transportation of goods and the development of the city. The canal was later expanded to accommodate the needs of growing commerce and industry.

In the mid-1800s, Louisville experienced a period of rapid growth and expansion. Thecompletion of the Louisville and Portland Canal in 1830 and the establishment of the Louisville and Nashville Railroad in 1850 marked significant milestones in the city's development. These developments facilitated the transportation of goods and the growth of industry, making Louisville a major commercial center.

During the Civil War, Louisville served as a strategic point for both the Union and Confederate forces. The city played a crucial role in transportation, as it was a major hub for the movement of troops and supplies.

In the late 1800s, Louisville continued to grow and diversify, with a focus on manufacturing and industry. The city's location on the Ohio River and the growth of the railroad network made it an ideal location for commerce and trade. The city's economic growth was further fueled by the growth of the state of Kentucky, which became a major agricultural producer.

Today, Louisville is a major city with a rich history and a diverse economy. The city's central location and strategic position on the Ohio River have contributed to its continued growth and development. Louisville is known for its rich cultural heritage, vibrant arts scene, and world-class sports venues, including the Kentucky Derby and the Kentucky Horse Park.

In summary, Louisville's history is deeply intertwined with the natural and strategic landscape of the Ohio River. From its early discovery by the French to its modern-day status as a major city, Louisville has been shaped by its location and the economic opportunities it offered.

The city's development has been marked by significant events and milestones, from the early treaties with Native American tribes to the expansion of the city's economic and cultural horizons. Today, Louisville stands as a testament to the enduring spirit and resilience of its people.
A TOWER FOR LOUISVILLE

THE HUMAN COMPETITION

A LATE SUBMISSION

BY ROBERT LYE BURY

HUMANA