An early flour mill design attributed to Oliver Evans circa 1790: a pioneering genius among millwrights.
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Motive and end and moral in the air:
Nice contradiction between fact and fact
Will make the whole read human and exact.

Robert Graves
By simple definition, a thesis is a proposition to be proved or maintained against argument. It is a treatise involving original research, thought, and philosophical development.

One type of architectural thesis has come to be defined as an in-depth study into the design of a particular building type. The disadvantage of this method is that no real questions are posed from the beginning; the design risks the chance of being preconceived without proper validation.

My approach to thesis may be regarded with the idea of development as a key theme. The project idea is conceived, it evolves, elaborates itself and, under close examination and criticism, may shift direction and emphasis before it is valid enough to be called a thesis.

I begin, therefore, with a small set of givens and a relatively large set of variables. The questions are many, the alternatives infinite. This degree of uncertainty lends to the spirit of the project a certain excitement, and a sense of accomplishment as the work progresses. It is a true challenge.
THE PROJECT
AN OVERVIEW

In its essence this thesis involves the observation, interpretation, and reintegration of a piece of Indiana landscape, a fully operational flour mill complete with grain silos, etc. The thesis concentrates on the mill’s relationship and interaction with its environment on a multitude of levels, and deals with specific issues such as its function, context, scale, massing and form of itself and its surroundings.

Specifically, the questions posed have to do with such issues as:

a) Urban context
b) E-Z Bake Flour Mill in relation to the formal system of the state, city, monuments;
c) The mill’s symbolic and physical presence in Indianapolis’ proposed White River Park Development;
d) More specifically, the potential ability of the mill to function as a gateway, or transition, between
city and river activities, as well as being an overwhelming artifact in and of itself, for what it does and what it is.

Generally, questions raised will have to do with perceptual issues involving how a person perceives, reacts to, and deals with such an environment in an urban context; the relevance of the process of design plays a major role in the outcome of the work with emphasis not necessarily on a final product but the process and means by which it was achieved.
It all begins with a fascination. The object? A flour mill, located in the heart of midwestern Indianapolis. This “landscape” has not only a strong presence but it is recognized as being apart from what is adjacent; distinct in being about something in particular, having an important sense of place and historical significance, an overwhelming sense of permanence.

The Acme-Evans Company is the oldest continuous enterprise in Indiana. It began 163 years ago in 1821 when Isaac Wilson, a veteran of the Revolutionary War, built the first grist mill along the banks of the Wau-paukuma River, or the White River as we know it. The Acme-Evans offices still occupy this same river location. As officials are proud to point out, Acme-Evans, at the time of it’s conception, did not locate in the heart of Indianapolis. Indianapolis, in effect, grew up around Acme-Evans.

Not only does the mill have an interesting history, it has important potential for the future. Although the physical structure of the mill and storage silos have existed for decades, the present systems and technology they employ for the production of flour is considered state-of-the-art. Pneumatic tube transportation systems have replaced the older mechanical bucket systems for mobilizing the raw materials throughout the plant. Computerized control panels monitor each step in the process for complete quality control. All of these technical innovations have contributed to the mill’s ability to increase its capacity and output by 50% without increasing physical size.

An understanding of all of these facts and figures is useful to the extent that they illustrate the past, present, and future importance of this enterprise. Not only is the mill a successful business enterprise, it is a symbol of Indiana’s past and present as an agricultural provider.
OBSERVATION & ANALYZATION
A CREATIVE PROCESS

The method I have employed in this work attempts to solicit a new point of view with regard to an existing landscape. It is founded on the belief that intense observation can and must form the basis of an architecture, particularly one involved with such a powerful context.

The general landscape with the object was selected as a starting point. Broad questions and issues may have been raised as starting points, but engagement and direction which those issues have taken have been due to the individual nature of the project. The charge, in other words, is to unearth specific subject matter and creative imagination.

"Art must step down from the pedestal to meet life half-way and assimilate the aesthetic values of the ugly and cast off, to rummage in squalor and kitsch in search of human values."

Bruno Zevi
It is of particular importance to be able to shed new light on the potential of this landscape. Place upon it a value, unlike it has been thought of in the past. In essence, to find epic material in this industrial image.

This was the initial feeling for the site, the awesomeness and monumentality yet the plainness and utility in the forms of the grain elevators. There seemed to exist a power not unlike that of the state capitol or Monument Circle.

The excitement of the project, therefore, holds a risk; after all one is never sure that the value which is projected to something is the value that it holds.

Therefore, the challenge of the project is to observe the Acme-Evans Flour Mill and value it not only for the purpose that it serves, but for its immense presence as a visual spectacle. It exists between the river and the city, with the potential to be a fitting symbol of an important part of Indiana's past, present, and future.
The initial stage of observation begins with simply understanding the existing conditions, not only in the sense of the actual landscape, but also in a generic building type.

With one of the more powerful features being the grain storage silos themselves, it is necessary to understand their essence, not only in terms of their use but in how they have historically been perceived.

To state the obvious, silos are simply vertical shafts for the storage of grain. They are entirely instrumental in character, their shapes being the result of calculations and whose processes of development are visually evident. They are generally buildings where anonymity is accepted to be their style. Their peculiarities originate not in spite of, but because of their lack of "design".
The American landscape claims as it's monuments not the pyramids or ruins of antiquity but the humble utilitarian objects of the here and now. Monumentality in the form of a grain elevator is worth celebrating for its naivity and honesty.

Though the grain elevators, flour mill, and railroad cars were created to meet the needs of industry, their forms carry conviction and seem to suggest something beyond their mere physical existence. An almost cosmic significance is inherent in the sheer size, sense of permanence, and the apparent rationalism of this industrial environment.

The first set of drawings began to simply explore the awesomeness and scale of the forms themselves. It was important to establish the mood the forms conveyed, how it felt to come in contact with them.

Le Corbusier

In order to fully understand the total scope of the environment, it was critical to experience the actual flour making process. After touring the entire facility, I can best describe my reaction as follows:

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"The layman visitor to a large flour mill will inevitably leave in a daze. He expects machinery, lots of it, and expects to be puzzled. Ironically, so little appears to be going on and so few people are involved. He looks over an entire floor of roller assemblies, all externally alike. Only a few hum and a faint sweetish odor hint that work is going forward. Another floor, perhaps also deserted, is covered with immense, solemnly twisting crate-like boxes—the sifters—served by a forest of chutes from above and below; once more there is no indication of the delicate separations being achieved inside the boxes. On yet another floor stands the purifiers; silent, monotonous, alone; through their windows the observer can watch the dance of the lighter particles over the vibrating sieves. Up near the roof is row upon row of dust collectors with their tubes arranged like spokes of a wheel, turning and resting, one step at a time. Here and there the visitor will meet a miller. Almost everywhere he sees chutes passing from floor to floor, overhead and under the machines, yet there is little to indicate the immense amount of flour being processed."
A century and a half of experience in the milling of wheat and the handling of flour has produced flour, quality, modern mill. Our mill produces 12,000,000 bushels of flour daily. Because of our favorable location to the principal centers of the wheat producing area, Angel Estate has specialized in soft wheat flour.

With a 20,000,000 bushel storage capacity at the mill and 60,000,000 bushel additional storage capacity on an adjacent farm, our company is in a position to supply large quantities of the highest quality wheat flour and soft wheat, as well as its products, to满足 the needs of the company to produce a flour that meets the customer's specifications.

Angel Estate owns the largest mill complex in the United States, with more than 500 workmen, two paper mill, two flour milling plants, and more than 150 acres of land. The company's commitment to continuous improvement in supplying high-quality flour has resulted in a long list of awards and recognition.
As stated in the beginning, the context of the mill becomes extremely critical, and becomes the primary contributor to the dynamics of the site. In a broad sense, Indianapolis was developed in terms of AlexanderRalston's plan for the new city in 1820. The plan incorporates a combination of L'Enfant's design for Washington D.C. and Thomas Jefferson's plan of regular squares. The scheme is therefore centralized and relies heavily on the axial/radial configuration of the streets.

An understanding of these original attitudes can be useful in analyzing the position of the mill in terms of its urban responsibilities.
Acme-Evans Flour Mill can be thought of as having a direct formal relationship to the basic structure of the mile square district. In terms of objects arranged on some form of datum, it can take its place in relation to Monument Circle, Market Square Arena, and the State Capitol Building to the east and the river and park to the west.

The mill has the potential to continue, terminate, or otherwise become involved with that progression.
As a valuable source of information and inspiration, the White River Park Design Assistance Team has contributed to the overall attitude of the project. P/DAT, as it has come to be known, was a four-day charrette held in February of 1980 in order to explore the alternatives of developing an urban park.

One aspect of their findings emphasized Indiana as a major factor in America’s food production, pointing out that Indianapolis could not have achieved its present stature without Indiana’s farms and railroads. The team, therefore, proposed that food be one of the park’s two major themes. They went on to recognize that the existence within the park of a working flour mill should become a key aspect in the park’s design.
The actual use of the mill as a major design aspect, however, seems to be neglected in the present White River Park Development Proposal. In fact, it is turned away from by the current proposal and focuses rather on a tower which has little or no relevance to Indiana's past, present or future.

In fact, the general attitude of some of those involved with the adoption of the current plan, complete with the tower, seems to be one of dislike for the presence of the mill at all.
A typical response recognizes the unaffordability of simply buying the mill out to relocate, and suggests that "for now they could at least paint it or something..."

It is this particular point of view I wish to convince of the tremendous opportunity available in this landmark.

..."If we had about two hundred or so... buy them out as they need money. Unfortunately we don't have that kind of money, so for the time being, they have to stay..."

..."Ah, to hell if you had the money, they would be out if there...

...or yes. For now though, I guess... they would just paint it or something..."
At this point in the process it was necessary to assume the validity of a landmark such as the flour mill and to begin to explore alternatives; to look at all the possibilities of creating a dialogue between the mill itself and the environment.

Generally, there became two directions that could best be looked at. One was the manipulation of the physical object; adding to, taking away or in some manner revealing part of the process. It may be educational in nature, making clear the entire process, from wheat to flour. In this approach, a miniaturization attitude is adopted in order to illustrate natural systems, processes, and products.
back
It soon became clear, much to my surprise, that the true value of this landscape lies in exactly how it exists. A quote from the Autumn jury illustrates this idea:

"Acme-Evans Flour Mill is what it is because it does what it does very well..."

This seemed to be more in line with the mill as an artifact, as a fine tuned machine, in need not of tampering with, but just to be left to run on its own. However its mere presence still suggests a powerful relationship with the park and river. Both as an object and as a backdrop, the forms and spaces presented a definite place, capable of communication with its surroundings, to be interacted with and to interact.
The actual textures, materials and forms of the mill environment seemed to suggest a sort of roughness, and eloquent clumsiness; a language could be developed using the attitudes of the existing; the implied formal system, the mundane and utilitarian, the mixture of human and grand scale. In essence, place a value on the object, appreciate it for what it is and for the attention it commands, and respond to it.
PRODUCTION OF THEORY

MOVEMENT -- EVENTS

In retrospect, the basic questions all along have had to do with understanding what the mill environment was all about and what it stood for; not only what it was with regard to function and process but in terms of its scale, massing, spatial definition, human perception, and its formal relationships to the urban environment. Fall quarter was devoted to making observations and drawings which attempted to explore these issues.

A proposal seems to be developing at this point which is primarily involved with the creation of experiences and events relative to the context of the site. The existence of an artifact of such great physical and symbolic proportions seems to impose a huge presence almost immediately on anyone who comes in direct contact with it. It is therefore appropriate to establish specific points or places from which to perceive the object and specific paths designed to move the viewer, direct attention, or otherwise define each place and occasion. The events or places can respond in a number of ways, and at various scales. They can help to enhance optimum visual and perceptual images of the mill while maintaining a dialogue with the urban fabric. And as a result of fulfilling these basic functions, the space will undoubtedly develop character and integrity of its own, thus creation of place and occasion.
As a source of further inspiration and learning, Baroque planning principles have become evident to me in attempting to structure an entire landscape. Where the Renaissance building stood in self isolation, the Baroque design related expansively to the environment.

The Baroque attempted to:
* define vast space
* dramatize space
* evoke a sense of time
* provide acceleration and deceleration

The implications that this type of attitude can have on a landscape such as the mill environment can be quite dynamic and can allow not only a focus on the object itself, but an opportunity to integrate the object into the fabric of the city.

As a means to more fully grasp the conceptual notions of space and time, place and occasion, to which I am referring, and how it relates to the Baroque spirit, I include the following set of ideas. It is intended as an interlude to help myself and the audience formulate a firm conceptual base from which to understand the origin of the proposal.
In the early 1960's, Aldo van Eyck emerged as an individual who was developing an almost mystic feeling for the psychological variance of space. He wrote:

"Whatever space and time mean, place and occasion mean more. For space in the image of man is place and time in the image of man is occasion... Provide that place, articulate the in between... make a welcome of each door and a countenance of each window... get closer to the shifting centre of human reality and build its counter-form... for each man and all men..."
With this inspiration, we can begin to look at the difference between space and place, and between time and occasion, to which van Eyck might have been alluding in his above statement.

First of all, how can place be defined as opposed to merely space? A place must be cultivated in the perceptual attitudes of people, according to their needs and desires. A place can be defined in a number of very simple ways. It could be any stable object that catches our attention and causes us to focus for a moment. A mountain peak or any natural phenomena may be somewhat inconspicuous, yet still hold significance for the eyes to rest, for attention to be consumed.

Sculpture seems to be able to create space of its own. Although it is an object in our total perceptual field, it sometimes has the power to command its own space. If it also fulfills upper level human needs such as self-esteem needs, promotion of self-actualization, and feelings of community, it then creates a sense of place.

Culture affects our perception of place and time. Certain objects, being either natural or man-made, have the capacity to persist, outliving the values of any particular period of time. We may be able to say that any large feature or object creates its own small world, to which people’s considerations may expand or contract, according to the social climate and needs of the people. It may be possible for monuments to transcend the values of a particular time period. However, the more representational and specific it is, the less chance it has for survival. Unfortunately, public symbols often lose their status as places and simply clutter up space.

A house seems to be a relatively simple building. Yet it is indeed a place, providing all of what Maslow refers to as the Hierarchy of Needs:

- Physiological needs
- Safety needs
- Belongingness needs
- Esteem needs
- Self-actualization

The house protects us, represents us and gives us a space to call home. It is a personal reflection.

Some types of places are not deliberate creations. For example, when Indianapolis was settled, there were first specific needs which had to be fulfilled. A forest was cleared, some houses built. A clearing is made, yet on the perimeter lies wilderness. A small man-made world is created, a refuge for the passerby, thus a place occurs. Time passes, more buildings and people arrive, space becomes more densely populated, neighborhoods develop, limits and domains are established.

It can then become a city, a symbol having meaning and pride. It can draw attention to itself by achieving power, wealth, and status or it can be significant through the occasions and festivals which can happen in its streets, the setting for the words and actions of its people.
We can thus see that the most successful places may be those which are not so highly visible. A place can be made possible by conflict with other places, by visual prominence, or by the prominence of its art, architecture and occasion.

Human places become very real through dramatization, while the identity of place is achieved by the drama of the hopes, needs, and functions of people.

We can now relate the concepts of space and time or 'place and occasion'. We can define time as motion or flow and place as a pause in the current.

The elements of a system interact and subordinate themselves to a dominant focus:

The focal point (place) becomes an organizing element to occur (time), possibly involving the person with a series of occasions but never losing the importance of the center.

The elements of the system can also be viewed in terms of movement and arrested movement, implying a certain dynamism and tension. The movement is critical, as the entire whole can only unfold itself to the viewer who actually walks through. The perception, also, can change with the relative position of the viewer.

In this view, human time is marked by stages just as human space is marked by pauses and events.

The principles of Baroque planning become extremely intriguing if examined in the light of the discussion to this point. The essence of the Baroque principles lie in the basic concepts of:

- focal point .... (place)
- movement .... (time)
- centralization
- systemization
We can thus understand the Baroque need to express conflicting concepts, that of systematism and dynamism, coming together to form a meaningful totality. We see the need to belong to an absolute and integrated, but open and dynamic system. These ideals were expressed in a structuring of existential space:

In general, place and occasion, as defined in the Baroque age, are spaces and paths that are dynamic, vital to one another, and varied within an overall system.

In summation, the purpose here has been to look at the basic elements which make a place and an occasion, to understand how a place is created, how it endures and serves the needs of people.

The Baroque attitude was then selected as one on which place, time and movement were fervently expressed. By looking at these two subjects simultaneously, it is easy to understand the basic elements and theories of the creation of place and then see how the theories were physically expressed in an age so vitally concerned with the issues. It is hoped that by seeing the theory and the utilization together, that a working knowledge should be seen and applied by us as shapers of space and place.
At this point in the process, having a clear understanding of the conceptual nature of the creation of place, it is possible to be more specific as to the exact proposal for the site. Generally, it has to do with the development of three specific points in space from which interaction with the mill and the environment will take place. To be even more responsive to the site conditions, the individual points will occur with three zones progressing from the city center to its "edge" which in this case is the river and White River Park.

These three zones may be identified as a) the Skyline Zone, consisting of taller structures and higher density, b) The Urban Edge where density and scale diminishes, and c) the River Landscape where the spirit of the park becomes dominant.

Each point within the zoning structure then responds to a specific set of criteria, with regard to the content of the site, the definition of place, and the desired series of views.
The first point of view, (number one on the drawing) for instance, must respond primarily as a gateway into the environment and as a transition from the Skyline to the Urban Edge. Point number two responds in very close proximity to the actual monument.

As scale of the mill, it is the point at which the observer is forced into intimate contact with it. One can see and feel the actual textures and realize the presence of a smaller scale, within the larger. Transition...
ion is now being established from the Urban Edge to the river. The third point responds dually also. In one respect, it is the terminus of a series of movements, views and places. It is here that one takes in the final vista to the city, the view of the statehouse dome with the bulk of the silos framing the entire picture. To the west it becomes the final procession to the river, where the city leaves off and the relief of the river is fully realized.
The element which binds the three points together is the establishment of a modified grid system. The most important aspect of this system is the utilization of the "slot" between the two sets of grain silos. This becomes the "center" focus, enabling the use of a radial system of rays extending outward across the site. This radial pattern superimposes itself on the regular city grid to form a pattern of movement and distortion. In fact, as the city grid progresses toward the river, it distorts itself in terms of the natural contours. At this point, there is a superimposition of various systems producing a complex yet ordered field in which to organize the places.
"One uses stone, wood, cement, and turns them into houses or palaces; that is construction. It calls for skill. But suddenly you touch my heart, you make me feel good, I am happy. I say, it is beautiful. This is architecture. This is art."

Le Corbusier
In summation, the Winter Quarters established a set of conceptual programmatic goals:

* mill as an object, both as frame and focus,
* creation of place and occasion,
* movement/arrested movement,
* drama and time as design elements,
* illusion, and
* front/back elements.

Accomplishments also include the concretization of a definite set of points, an overall structural framework for the design to operate and develop within.
Generation of form to express each point in space consists of a basic set of elements. Elementary and simple by nature the basic elements are concerned not necessarily with the end form but with the formative process and whether or not the elements perform their basic duties. Horizontal and vertical planes begin to form a set of variables, voids within the solids, producing an added layer of direction and information. At this point in the process I begin to explore the possibilities of "improvisational" thinking putting together models and drawings in a somewhat loose and arbitrary manner with the implication of dynamism and movement, the prime impetus on the forms themselves. This "exercise" explores the possibilities of contrast, of juxtaposing the formal, regular order of an industrial environment with the apparent informal lack of order of the structures.
I also begin to explore the possibilities of the concept of a stage set. Thin walls and planes concerned with a frontal approach of view but allowing the observer to pass through and around, realizing the vulnerability of the place, the idea of being a temporary experience, a fleeting moment. Juxtaposition of human scale and ground scale, which is inherent in the mill forms, also becomes an issue in form generation.
Spring Quarter's formal conceptual development produces a great concern for three major areas of the proposal:

* **Content**—or fabric of the environment. It's color, texture, scale, style, character, personality, and uniqueness, both as individuals and as part of an overall framework.
* **Place**—the body in the environment. Leaving it, entering it, in it, Here vs. There, Front and Back.
* **Optics**—serial vision; a progression of views. Use of existing and emerging views.

The second point is realized again with the curve leading to the center. A skeletal shell exists in similar proportion to the mill. The audience steps inside to experience the negative space. From this point on the grid diminishes. Nature is interfacing the city. Rigidity turns to freedom of space.

The third and final point illustrates the linear force between the city and the river. There is opportunity now to enter this structure. From a higher vantage point I realize the cityscape for one last fleeting moment. I turn and progress only to see this "place" disappear into the river.

The final design of the places and events hopes to evoke a sense of individuality yet and overall cohesiveness. The utilization of the curved element as a directional device in each point unifies one's perception of all three. At the first gateway, as it has come to be known, there are human and monumental scales operating, as are these indications of front and back or inside and outside. The path is articulated by a strong edge of trees, only to be broken by a turn toward the center. The center takes attention momentarily but again direction is changed. The severe superimposition of the path has become evident in the slice through an existing but vacant building. The path forces itself onward.

The reintegration of the E-Z Bake Flour mill implies the interconnection between building, city and landscape. It implies a dialogue between the architecture and it's environment.

In effect, an art of architecture producing pieces; an art of relationships ... visual/aesthetic manipulation.
THE (UN)FINISHED PRODUCT
FORM vs. FORMATIVE PROCESS

All along I have attempted to be concerned with the formative process, not just with form. This architecture represents the unfinished attitude of the utilitarian nature of the mill. It presupposes growth and change. It is an architecture not isolated— it can communicate with external reality or soil its hands with the cast off. The unfinished approach is a fundamental prerequisite if an architecture is to be involved in an urbanscape, assimilate its contradictions and rummage in squalor and kitsch in search of value.

The E-Z Bake Flour Company as a visual spectacle, then, represents a change. It suggests an alternative reality, experience and meaning. This experience is actually the presentation of an idea, unfinished by conventional standards.

This project is not an object in the traditional sense— that is the end result of a process— but mainly the record of a process. Thus the process itself becomes an object; not an object of aesthetic appreciation necessarily, but an exploration into the endless potential manipulations inherent in art and architecture.
1. *American Art Since 1900* Barbara Rose

2. *Baroque Architecture* Christian Norberg-Schulz

3. *House X* Peter Eisenman


5. *P/DAT: White River Park Design Assistance* Team

6. *Sense and Place* Fritz Steele

7. *Space and Place* Yi-Fu Tuan