

ABSTRACTION AND ARCHITECTURE

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Abstraction:

the quality of dealing with ideas rather than events,

or something that exists only as an idea,

or the process of considering something independently of its associations, attributes, or concrete accompaniments.¹

Abstract Art:

art that does not attempt to represent external, recognizable reality, but seeks to achieve its effect using shapes, forms, colors, and textures.²

ABSTRACTION IN THE ACADEMY:

There is a curious cultural phenomenon in schools of architecture: namely that abstraction is an unassailable virtue in design. Abstraction is presented as an overt goal or looms as an implied goal. It is a mode of operation. It is understood as a sign of sophistication in drawings as well as parlance. It is a threshold over which students must step to become initiated in the culture of design.

But what does abstraction even mean for architecture? If architecture is the art of building, how can buildings be abstracted? Architecture leads to the generation of real environments that can be inhabited, provide shelter, and in their best moments speak to the spirit. Architecture exists through material manipulation, structural ingenuity, durable assemblies, and spatial quality. If abstraction is a

key to architecture or the process of making architecture, then we must understand what abstraction means in the context of architecture. To this end, it may be useful to consider abstraction in the realm of art.

ABSTRACTION IN PAINTING:

Abstraction in art, especially the medium of painting, is an understandable and natural outgrowth of the process of making such art. Each artistic medium has a distinct mode and technique associated with it. Painting, for example, involves the application of pigment to a surface. In painting, therefore, color is the first critical implement. Consequently, many of the great paintings from any era strike us first and foremost by their use of color. Raphael, Rembrandt, and Rothko all are masters of color. In the application of pigment to surface, painting can be concerned with nothing more than color, but it turns out that color can also be harnessed to achieve additional goals of the artist. Color can be a vehicle for generating an emotional response. Color can be used to create a sense of depth on a two-dimensional plane. Color can be applied to depict ideas in the mind of the artist or things or scenes the artist sees or knows. The artist can apply color with many motivations, including representation of the world around her.

When artists do choose to give us some level of recognition of the external world through representation, we appreciate it, especially when the chosen technique is skillfully executed. We appreciate it on its own terms whether it is rendered with absolute rigor to appear just as the actual person, thing, or place appears to the eye, or it is adjusted and filtered through the sensibility and technique of the artist. The artist can capture the world around us in a similar way a photograph would, or an artist can reduce the world around us to its essential nature or

underlying order, offering to share with us their insight into such things. This is one sense of abstraction in painting. Abstraction here is judged relative to the distance an artist moves from a literal representation of the subject to a reduced or essential depiction of the subject.

In representational art, literal or abstracted, we appreciate



Mark Rothko, No. 10 1950, oil on canvas, Museum of Modern Art

the capturing of the world around us in the painting, and the artist's particular manner of presenting the world back to us. Abstraction in this mode is perhaps best understood as partial, in that it is a tool of reduction or purposeful distancing from the literal representation of a person, thing, or place, but the person, thing, or place is still recognizable, is still represented.

So in painting the act of applying pigment to surface can be driven by a goal of some form of representation. That said, there is no inherent necessity for the medium of painting to achieve any level of representation. We equally appreciate art where abstraction is complete and makes no attempt to represent external reality. For example, we are deeply touched by Rothko's exquisite proportions and color combinations, as well as his technique that imparts an ethereal quality to the work. We are intrigued by the exuberance and complexity of Jackson Pollock's layered canvases which inspire us to ponder the technique itself and the interrelationship of the selected colors. We marvel at Miró's mysterious symbols beautifully composed amidst such harmonious colors.

The common factor in our appreciation of art that ranges from literal and representational to abstract is the particular artist's application of pigment to a surface. This lies at the core of painting. Abstraction in the context of painting is rooted not in any change of the core activity, but in the intent of the artist as they proceed with this core activity. Although the core activity has no inherent requirement of representation, abstraction is understood as the distance from or absence of representation. Abstraction here only exists in relation to representation.

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WHAT DOES ABSTRACTION MEAN FOR ARCHITECTURE?

Abstraction in painting is commonly understood through its relationship to representation, but neither the pursuit of abstraction or representation changes the core activity of painting. Just as applying pigment to a surface is the underlying core activity of painting, material manipulation and assembly are the core activities of architecture. This examination of abstraction in painting raises the question



Yale Center for British Art, New Haven, CT

for architecture: is there a range of architectural design that similarly spans from representational to abstract?

Material manipulation and assembly can be executed in simple ways or complex ways. They can be executed with practicality as the emphasis or with poetic evocation as the emphasis. Sometimes, these activities are executed with sculpture as an inspiration and intent. We must examine the variations of execution of this core activity to discover the meaning of representation and abstraction in architecture.

Practicality might be one link to understanding literal representation in architecture. A simple shed can be designed in as pure a utilitarian fashion as possible. Each element of the shed serves only its absolute function within the structure. Nothing is added that is unnecessary. This execution of the core activity of material manipulation and assembly with a practical emphasis is a literal process, with no reduction or distancing from the literal. But if the simple shed is a literal representation in architecture, what would an abstract shed be like? How would the materials be manipulated differently? How would the assembly change? There is no obvious or inherent answer to these questions. Abstraction does not seem to be a response to *this* form of the literal.

Another manifestation of the literal in architecture also seems to be a dead end in regard to understanding abstraction. On rare occasions, architectural activity is intended to achieve a literal representation of something in the world, a duck or a basket for example. But these moments are anomalies when viewed against that vast majority of architecture works both contemporary and historic. Besides this type of kitsch representation of actual things, what else could literal representation in architecture refer to?

One place one can find representational depictions in architecture is at the level of the detail or in ornamentation. Plants are depicted in many works of classical and medieval architecture, from moldings with lesbian leaf motifs to Corinthian capitals modeled on the acanthus leaf. Animal forms are also often integrated into buildings, with lion heads and dragon like creatures used as scuppers or gargoyles to shed water away from the building wall. In Morocco, one can find Arabic text as a touchstone for a decorative motif in the exquisite carved plasterwork of important buildings. The human form also finds representation in buildings such as the Erechtheion on the Acropolis in Athens or in the entrance portal of many Gothic cathedrals.

All of these examples really pertain to parts and pieces of buildings but not the overarching concept of the building. These elements are articulated ornaments of buildings that either serve a distinct purpose, such as depicting an important historical event, or they are a reflection of a tradition of decoration of buildings. This level of representation is marked by a similar range of literal representation or reductive abstraction. So certainly one sense of abstraction in architecture could be the reduction of representational elements that are part of an ornamental system in a building. Another sense of abstraction could be the absence of such representational elements. But this is a relatively superficial notion of abstraction in architecture. Digging deeper may reveal another possible understanding of abstraction.

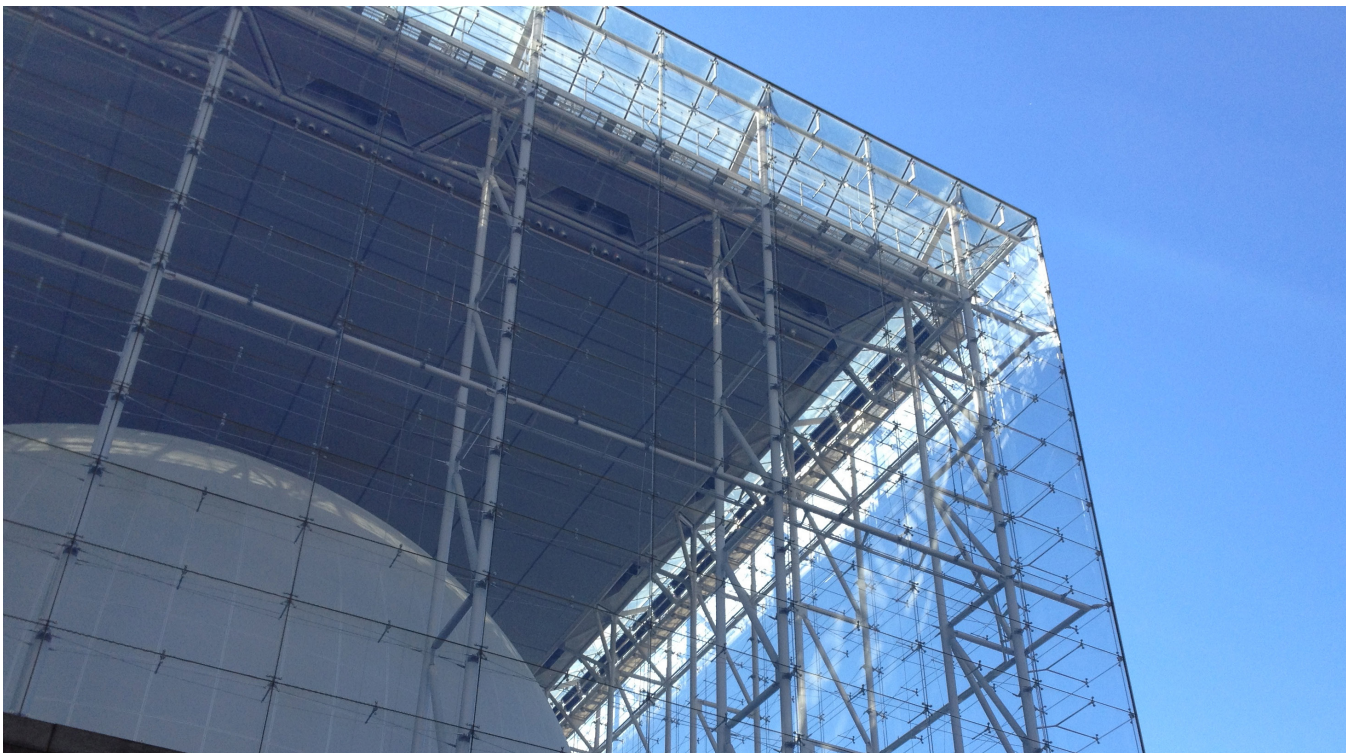


The New York Times Building, New York

Returning to the core activity of architecture, material manipulation and assembly, one can consider representation and abstraction as being rooted in the tectonic expression of the work. Tectonic expression can be defined as the articulation of the interaction of materials, their inherent properties, their shaping and connections, and the forces acting on the resulting assembly. Architects must always deal with the forces acting on the selected materials, but can vary their emphasis in articulating and expressing this interaction. Classical architects tap into the rich and long history of tectonic elements we call the “orders” that evolved in ancient Greece. Medieval architects in Europe built with a rich expression of forces acting on their bold masonry cathedrals in the evolution of tectonic elements like the flying buttress. Modernism gave us the steel piloti in replacement of the classical column.

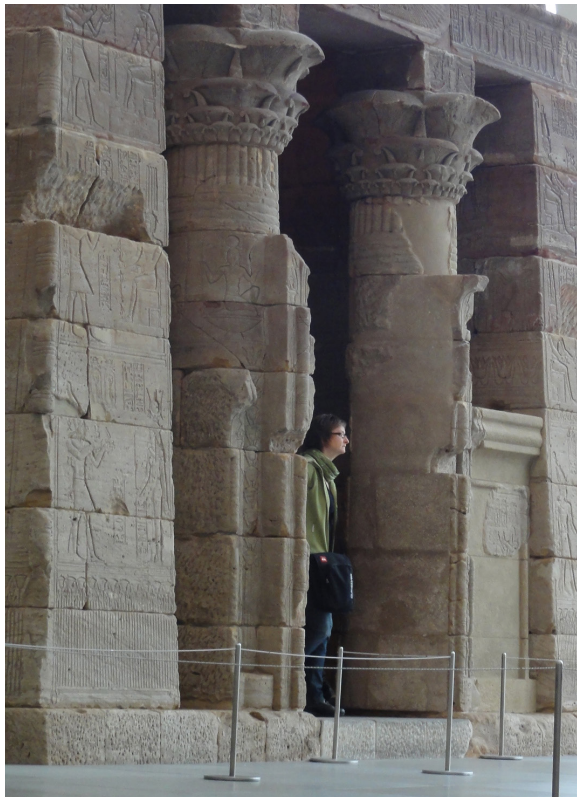
Examined through the lens of tectonic expression, there is a compelling continuity in architectural works ancient to modern. A steel piloti is not a fundamental departure from the stone column of an Egyptian or Greek temple; they all are fundamentally structural elements doing the work of supporting themselves and the assembly above them. These elements are literally the elements doing the work, expressing their material properties and the forces acting on them. Whether an ancient stone column or a steel piloti, the proportions of these columns are literally reflective of the material’s compressive and tensile strength.

To further complicate the question of representation and abstraction in architecture, tectonic expressionism is potentially both literal and abstract at the same time. It is literal in the way it responds directly to the forces and the



Rose Center for Earth and Space, New York

articulation of the particular role of structural elements. For example, trabeated systems require columns that carry the load of the wall or roof above. The dead load increases as it moves down through the column, so the column could be designed to get wider at the bottom to resist the increasing force, articulating and expressing the forces in a literal fashion. This is the source of entasis in a classical Greek column. Louis Kahn's Yale Center for British Art, with its concrete columns growing in size as they get closer to the ground, is a similar example of literal tectonic expression. Similarly, Renzo Piano's exposed steel structure of tapered beams and tension rods in the New York Times building is a clear, literal tectonic expression that imparts a subtle elegance to the building much as entasis does for an ancient temple.



Temple of Dendur, Metropolitan Museum of Art

The abstraction of tectonic expression is rooted in the “process of considering something independently of its associations, attributes, or concrete accompaniments.”³ The tectonic element is conceived independently of the concrete accompaniment when it is desired as an end in itself, as a *language* of architecture. In their use as part of a language of architecture, tectonic elements are often “fictional” symbols standing for the actual elements of structure and force resistance that may not be otherwise visible or apparent. Classical pilasters are symbols in this way, as are Mies van der Rohe's exposed steel sections on the Seagram Building. Tectonic elements therefore can be seen as both literal and abstract elements.

This said, many buildings are built without a clear intention of tectonic expression, or with a clear intent to avoid tectonic expression. Edward Ford writes of this approach to design:

*the abstract detail is the opposite of the articulated detail. A detail is considered articulated to the extent to which it expresses and demonstrates the resolution of the problems of weight, materials, connection, and assembly. When it expresses the opposite - absence of weight, an indifference to material, a lack of apparent connection, and an apparent disregard for the elements- it is seen as abstract.*⁴

This form of abstraction in architecture is difficult to achieve, however, due to the material reality of all buildings. Weight must be resisted while materials must be chosen and connected. This form of abstraction in architecture therefore can be seen as an attempt to overcome the inherent tectonic nature of architecture. In

this way, similar to the meaning of abstraction in painting, abstraction's primary meaning in architecture can only be understood through the knowledge and experience of architecture's tectonic nature. This conclusion has implications for architectural education.

UNINTENDED CONSEQUENCES OF ABSTRACTION IN ARCHITECTURE:

A clear goal of abstraction in thought and research in any field is to reduce something tangible and real to its essential nature so that it can be better understood. This approach to examination is certainly valuable in architectural education, but it is not the only approach to investigation of the world around us. A primary emphasis on abstraction in architectural education, without a grounding in the tectonic nature of architecture, has the potential to undermine a student's full understanding of the nature of architecture. It also has other potential impacts.

Emphasis on abstraction in architectural education may also impact inquiry and research in unintended ways. Careful observation of things as they are is a critical skill for architects as they mold and change the built environment. In-depth investigation of the "concrete accompaniments" of the project provide an architect with understanding of how things really work and an increasing sensitivity to place and context. This is especially important in the context of a college of technology, where performance and innovation must be measured against real world conditions. Therefore abstraction, as part of a design process, should not be sanctified in a way likely to shortchange or de-value the investigation of the concrete reality in which we work.

PLACING ABSTRACTION IN CONTEXT:

In the Academy abstraction needs to be defined and placed in context. In concept design abstraction has a clear use in thinking about form. In analysis and diagramming, abstraction clearly has its virtue as a tool for reduction of information to the essential. But in these instances abstraction is a tool, not a goal. Where abstraction in architecture is achieved as a goal, it is accomplished as a reflection on materials, assembly, and tectonic expression. As such it can and should be explored and studied as a means of developing a language of architecture or as an intentional negation of the tectonic element. Therefore, the introduction to abstraction in architecture as a goal makes most sense for students that have already developed a grasp of the fundamental tectonic nature of architecture. For this reason, abstraction is not a starting point or central facet of architectural education, but a nuanced perspective on the fundamental tectonic basis of architecture.

Notes:

1. Abate, Frank R., and Elizabeth Jewell. *The New Oxford American Dictionary*. New York: Oxford UP, 2010. Print.
2. *ibid*
3. *ibid*
4. Ford, Edward R. *Five Houses, Ten Details*. New York: Princeton Architectural, 2009. Print.

Photos by author



Jackson Pollock, Detail view of Number 1A, 1948 oil and enamel paint on canvas, Museum of Modern Art