

Building Analysis Reconsidered

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INTRODUCTION

“Whilst in classical architecture the window could be considered a beautiful object unto itself (which also justified separate analysis of this single element), the beautiful modern window can only be understood in relationship to the buildings overall spatial layout. It has ceased to be an object unto itself.”

von Miess

In the introduction of his book *Elements of Architecture*, von Meiss uses the window to describe one of the fundamental issues facing architectural educators who teach at the foundation level. The window, he writes, is in a state of crisis caused by the “great formal diversity” created by the vast technological advances and growth of material wealth in the twentieth century. The window’s form is no longer restricted to being an interruption in a bearing wall that is responsible for providing light and ventilation. It has ceased being an “objects unto themselves” with its own dictates that leads to form. Now, unconstrained, the window is pliable and available to be bent (sometimes literally) to the architect’s will. In this new situation, a window can only be understood and evaluated in relationship to or as part of the overall composition. Herein lies the crisis for von Meiss, if building elements such as the window are no longer formed by shared principles but instead formed within personal vocabularies, of which there are many, how are they taught?¹

Central to von Meiss’s introduction (though only mentioned tangentially) is formal building analysis: that case study exercise that was once central to the foundation of architectural education. It too is in crisis, and for many of the same reasons. Those shared principles that once informed (and formed) the window were the same principles by which it was analyzed. Those things that constituted a window—its constituent elements—were clearly defined and fixed. This no longer being the case, how then do we analyze a window? Indeed, if the window is simply an example and works of architecture are now

more products of personal vocabularies than shared principles, how are they to be analyzed?

This paper addresses this question and, in doing so, attempts to reconceptualize formal building analysis. It will first critique the way building analysis has been taught over the past 20 years as presented in texts by Baker, Clarke, Leupen, and Urwin.² This critique argues first that these texts presume that the complex whole to be analyzed is “architecture,” thereby assuming a predetermined set of formal constituent elements, and second, that they neglect the portion of analysis that seeks to explain the interrelationship of the constituents to one another as a way better understand the whole. The consequence of this is threefold: an inflexible, predetermined frame too rigid to accommodate (and so usually excludes) many contemporary buildings and older non-conical ones; a type of automatic architecture machine: students simply include the predetermined set of formal constituent elements in their work thereby producing “architecture”; and lastly, students are left without a model of how to synthesize architecture’s constituents (whatever they may be) into a cohesive complex whole. In response to this critique, the paper proposes argument analysis as an alternative model for building analysis, one that would more rightly be called “building argument”. Building argument is presented here as providing several things: a more flexible frame that is derived from the particular form of the building under scrutiny; habits of thought for the student such as critical reasoning and inquiry; and finally, a model of synthesis based on the intent the author, or, to put it another way, a model of how other architects have brought together parts into a cohesive whole to achieve their intent.

ANALYSIS OF ANALYSIS:

Analysis is the breaking-down of a complex whole into its constituents and explaining their interrelationship or relationship to an overall structure to better understand

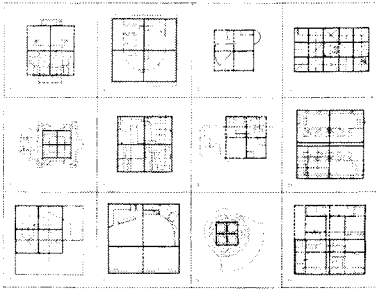


Fig. 1. particular applied to the general – Clarke.

that complex whole.
Bloom's Taxonomy

Analysis is itself a complex whole that consists of two steps: (1) the breaking-down of a complex whole into its constituents; and (2) explaining their interrelationship or relationship to an overall structure. These parts, particularly the first, bear on strong unstated assumptions that, if not made explicit, create an illusion of a value free, neutral process. The first assumption involves the decision of what the "complex whole" will be. The complex whole is either a category of things from which conclusions are drawn that are applied to individual cases, or the complex whole is an individual case from which conclusions are drawn about a broad category. In either situation, the assumption is made that what is found generally applies to the particular; or it's opposite, what if found in the particular can be found generally. Related is the second assumption which involves the decision of what are the constituents of the complex whole. To determine the constituents of a thing is to determine the necessary condition for the thing to exist. It defines the thing and creates an inside and outside. A Romanesque cathedral, for example, has constituent elements that allow us to identify it as such. They become criteria by which we determine whether a cathedral is Romanesque or not. If those elements are not present, then it is not classified as Romanesque. This may seem appropriate for a fixed historical type, but when applied to a more open and evolving things such as architectural form, analysis easily becomes a restrictive, overly exclusionary, value-laden process. It becomes self-fulfilling as it lists constituents so that they may be "found" and included in the making of a thing to again be found.

FORMAL BUILDING ANALYSIS

Formalist Garbage. This is the only way to describe the diagramming efforts that have been shown here. It is almost ridiculous to see the attempt to find the golden rectangle in almost every building. [...] I guess that this mumbo-jumbo stopped at Venturi as I haven't seen any "analysis" (save critical and existential) of Holl, or HDM or Ito or Koolhaas or Eisenmann or anyone of the Avant Garde. Stay away from this book if you want to learn

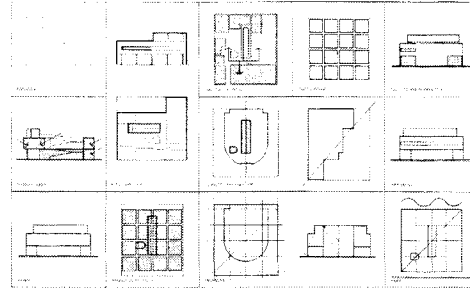


Fig. 2. general applied to the particular – Clarke.

anything about architecture.

Reviewer: A reader from Princeton, NJ
reviewer of Clark's *Precedents in Architecture*, found at
Amazon.com³

Clark, Baker, Urwin, and Leupen consider the complex whole to be not a single building but rather "architecture." They see architecture as a thing that exists independent of any one building; as a complex whole unto itself with its own set of underlying constituents. Here, then, the term "formal" in the phrase "formal building analysis" means not simply an analysis of the size, shape, and outward appearance of the building (its form), but also that form has specific, intrinsic characteristics that are internal to architecture. A formal analysis is one performed on architecture's "own terms", so to speak.³ This view suggests there is a nature to architecture. Those things that constitute its nature are necessary (if not sufficient) conditions for it to exist – a building is not architecture if it does not have these constituents. This nature varies slightly from author to author. For Clark, perhaps the most consistent and focused text, geometry and ordering systems are those constituent elements. Baker, Urwin, and Leupen include geometry but also place-making, typology, and program to varying degrees. In each case the authors assume that these constituent elements exist independent of any one building but apply to all that fit within the (or their) category of architecture

In practice, this leads the authors to make templates of sorts (for Clark, quite literally) that are brought to bear on buildings (fig 1, 2). These templates can be seen in one of two ways: at worst, they are a fixed set of formal rules to which each work of architecture must adhere or with which be endowed; at best, they are a peg-board with pre-made holes of varying shapes and size into which the student attempts to fit their building. The former being entirely restrictive and proscriptive, while the latter at least offers options for conforming. In each case, however, a predetermined frame is brought to bear on a building, independent of that building. Such a tool is too fixed and rigid to accommodate many contemporary buildings (fig 3, 4) and many older non-conical ones. The limits of architecture are too strictly defined and certain building form too easily excluded. The templates are simply obsolete as they are unable

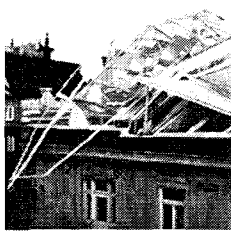


Fig. 3. Coop Himmelblau.

to accommodate the diversity of form that exists in contemporary architecture.

The templates also teach unproductive intellectual habit. Students are taught that there is a fixed, predetermined body of “design” knowledge that must simply be consumed and then regurgitated. The process becomes one more similar to finding Waldo than to the intended critical inquiry skills so valued by educators. When used as a model for design, analysis taught in this way creates for the student to a type of automatic architecture machine: if they simply include the constituent elements in their work, they have produced “architecture”. These two consequences result partly from author’s neglect of the second component of analysis: the explaining of the interrelationship of the constituents to one another and/or to a structure to better understand the whole. None of the authors actually describes or explains how the various parts of a building work together to make a cohesive complex whole. Instead, they establish independent categories of constituents, such as structure or geometry, then apply these categories separately to variety of buildings. Such a process that does not explain how the constituents interrelate as a complex whole restricts the usefulness of analysis for architectural education: that being the use of formal building analysis as a model of synthesis.

BUILDING ARGUMENT:

“. . . between the intention of the author (very difficult to find out and frequently irrelevant to the interpretation of the text) and the intention of the interpreter who (to quote Richard Rorty) simply ‘beats texts into a shape which will serve for his purpose’, there is a third possibility. There is an intention of the text”.

Umberto Eco

Despite the state of crisis formal building analysis finds itself, there are significant reasons to resuscitate it as an educational exercise. First, there is a need within architectural education for a model of synthesis; that being how the various parts of a building are brought together such that they work in concert

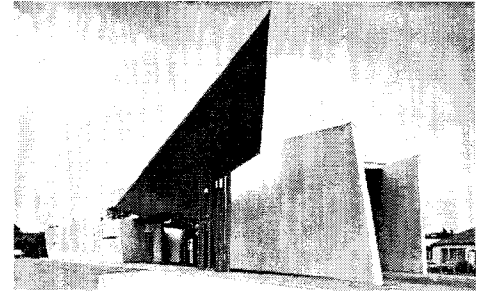


Fig. 4. Zaha Hadid.

and thereby make a cohesive whole. The study of precedent in the form of case studies has been and continues to be an effective way of providing this model. Second, the intellectual skill of analysis is one of the higher thinking skills valued not only within academia but also necessary for success within contemporary practice. Analysis is the intellectual skill that facilitates one’s ability to, among other things, break-down complex problems, identify relationships between parts of things, and understand how things work, or do not work, together. Formal building analysis should, then, not be simply dismissed or abandoned, but rather reconceptualized.

A useful model for this exists in almost every university freshman English course.⁵ That model is argument analysis. Its usefulness relies first on the similarities between buildings and arguments and second on the role intent, or rather, the interpretation of intent, plays in each (*fig 5*). An argument requires an author to fit together disparate facts, reasons or evidence in such a way that they serve the author’s intent in the form of a cohesive whole – a written or spoken claim. Buildings too are claims, in a way. They are cohesive wholes constructed from disparate parts – structure, building systems, historical precedent, site, program – fit together such that they serve the architects intent. Argument analysis reverses this process, as is building analysis modeled after it, or what I call here building argument. The reader dismantles that cohesive whole to (1) identify the authors claim, (2) judge if that claim follows from the given facts or reasons and (3) identify what, if any, unstated assumption are used to construct the argument. Interestingly, argument analysis and building argument calls for the reader to construct an argument himself; one which makes a claim about what the argument just read claims and how that claim is or is not properly supported. With this shift from reader as passive receiver of a self-evident text to active maker of meaning of an open text, issues of interpretation arise. Of interest here is Umberto Eco’s position that there is “intent of the text.” For Eco, meaning is indeed slippery but only so much so. Interpretation is limited by the “brute matter” (to use Rykwert’s term from another context) of the text.⁶ This view is useful here because argument analysis asks the reader to have a certain fidelity to the text. Indeed, a significant aspect of argument analysis is the notion that claims must be based on evidence. That evidence, when making a claim about an argument, must



Fig. 6. Kahn – materials privileged.

come from the text of that argument. In argument analysis, a reader must construct meaning from only the material of the text. To put it another way, evidence of the meaning of a text must be fabricated from the text itself.

This position on interpretation is useful for building analysis modeled after argument analysis, or what I will call here building argument. First, a certain fidelity to the building bounds the scope of possible evidence such that the exercise is manageable for foundation level undergraduates. Second, and more interestingly, this fidelity facilitates the teaching of critical reasoning which is founded on the notion that claims and positions are based on evidence.⁹ Third, this fidelity also allows building argument to effectively provide a model of synthesis; meaning it models the way an architect as previously fit together disparate parts such that they constitute a cohesive whole. Additionally, Eco's position leaves room for multiple interpretations. It does not wholly close a work, thereby avoiding the issue of Truth. It asks only that meaning be constructed, or reconstructed from the work. If, for instance, a student, after studying the Villa Savoye, came to the conclusion that the architectural promenade is the most privileged element of the house, one would not ask if that was true or not but rather if the student had reconstructed the house in argument form such that all its parts came together to make a convincing cohesive argument for this claim.

Buildings too are claims, in a way. They are cohesive wholes constructed from disparate parts – structure, building systems,



Fig. 7. Le Corbusier – materials suppressed.

historical precedent, site, program – which are fit together such that they serve the architect's intent. Architects construct building, just as authors construct arguments. Indeed, as a way of achieving their intent, architects use the same rhetorical devices applied to buildings as authors do to texts. They suppress certain things in favor of privileging others; meaning some things are back-grounded or made mute while others are brought to the fore or exposed. Some things are the vehicles to implement intent while other must be minimize so not to hinder intent.

The focus on intent is one of the significant differences between the traditional model of building analysis and building argument. Intent is particular to a single building. All buildings do not have the same intent. Certainly, a collection of buildings by a single architect, such as Le Corbusier's villas, may have very similar intents, but never-the-less, building argument bring to bear no predetermined, extra-textual frame on a building. Instead, it attempts to discern the intent of the author by taking apart a building to see if its parts are used in some coordinated way such that one may draw a reasonable conclusion as to that intent. It assumes that the complex whole is only a building; no broader category. In doing so, the issue of constituent elements as necessary conditions becomes moot. Constituent elements become thing of which almost all buildings consist or contain but which are privileged in some while suppressed in others; things such as structure, program, site, materials, etc. The list of such things is neither definitive nor restrictive. No one, for

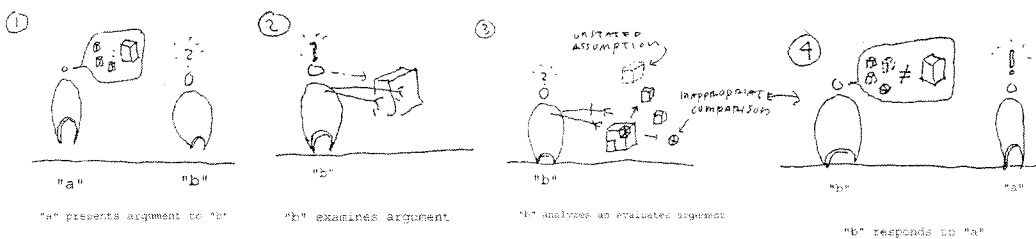


Fig. 5. analysis diagrammed – argument and building.

example, would consider materials as a privileged element of the Villa Savoye, as in the way they are in some of Kahn's work. Still materials are a constituent element of the Villa Savoye. They simply are suppressed in favor of other things such as the architectural promenade.

CONCLUSION

Within beginning design, building analysis is well worth consideration. Reconceptualized as building argument, students can construct more flexible frames to understand building form. Students are taught habits of such as argumentation, critical reasoning and inquiry. Finally, a model of synthesis is provided to the student – one based in intent. This is of some importance as when the student herself engages in the design process, she too will issue intent and seek to bring together various parts. To put it another way, a model of how other architects have brought together parts into a cohesive whole to achieve their intent.

NOTES

¹ See introduction of von Miess.

² Other texts were considered, particularly Ching and von Miess, but these, while implicitly dealing with formal.

³ A sentiment often expressed informally but yet to be considered at length. This is one of the goals of this paper.

⁴ See *Keywords* by Williams. "Formalist" has in depth discussion of form and formalism.

⁵ See Rampage or Cooper as examples.

⁶ See Eco's *Interpretation and Overinterpretation* for an encapsulated explanation of his position.

⁷ See Thomson for a concise description critical reasoning and its relationship to argumentation. This text is used in the author's building argument course.

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