WEEK 15- ISSUE

ARCH-572, ARCHITECTURE THEORY AND CRITICISM

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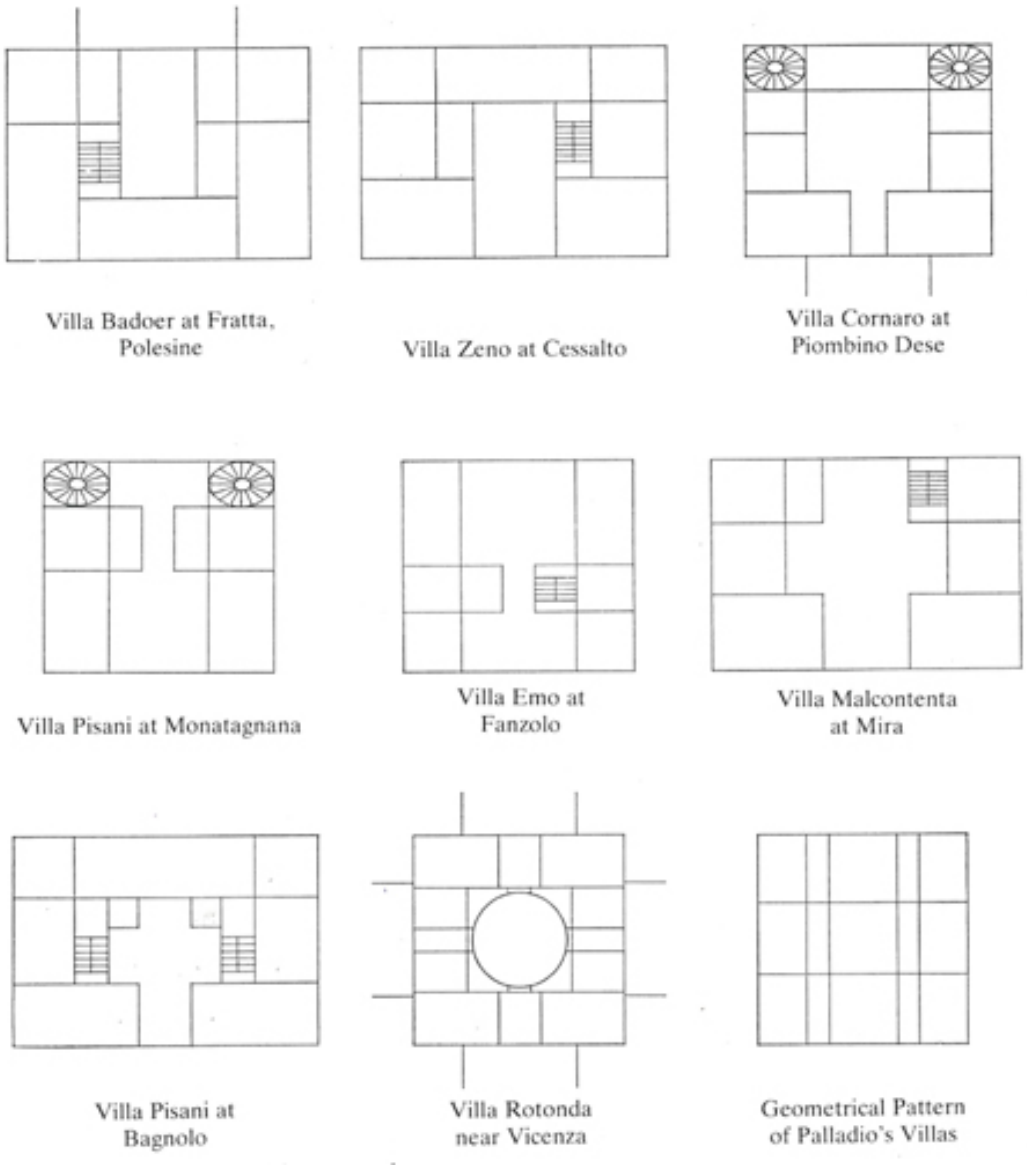

Fig 1: Rudolf Wittkower's representation of Palladio's villas

Fig 1. Wittkower, Rudolf ed. "Principles of Palladio's architecture" In Wittkower, Rudolf ed., Architectural principles in the age of humanism, pp. 73 New York: W.W. Norton, 1971.

Grid as a Medium in Architecture

The conversation is between a father, who is an architect by profession, and son named Donald, who is in his first year of architecture school.

Dad- Hey Donald! What are you working on at 2 a.m.! Go get some sleep, you have college tomorrow.

Donald- Hey dad! I have an assignment due tomorrow for my studio. I cannot sleep before I finish this.

Dad- Welcome to Architecture my son! May I know what are you working on?

Donald- We are given a nine square grid exercise, derived from Palladian geometry. We are asked to find creative ways to fit in architectural elements within these predetermined grid system.

Dad- Interesting! So.. out of curiosity, how does this grid system help you or restrict you while designing?

Donald- To be honest dad, I love grids. It helps me bring order to chaos. Not just for this assignment, my devotion lies in using graph sheet and tracing paper when i begin designing anything. It is difficult for me to start designing without having a Grid under my tracing paper. Without it, I wouldn't know where to begin and where to end. I wouldn't be able to arrange spaces in relation to each other.

Dad- That reminds me of chapter 'Grids' from the book '*Possible Mediums'* [1]. Grid format is a great geometrical system to understand spatial qualities. I am glad you have been able to utilize grid to empower your design skills!

Donald- Thanks! And you know, Grid as a medium, has been prominent over the history of architecture and design. In fact Palladio, one of the greatest influences in the history of architecture, obscured the local and traditional characters from his future buildings after his first stay in Rome. All his buildings after 1450's were organized based on the same mathematical principle.[2]

Dad- You are learning quite a bit!

Donald- Indeed! One day, like Palladio's mathematical formula of villas, I want to create my own mathematical formula for an ideal skyscraper.

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1. Bair, Kelly, Kristy Balliet, Adam Fure, Kyle Miller eds "Grids" In Bair et al. eds., Possible mediums, pp. 61-68. NewYork; Barcelona: Actar Publishers, 2018.
2. Wittkower, Rudolf ed. "Principles of Palladio's architecture" In Wittkower, Rudolf ed., Architectural principles in the age of humanism, pp. 71 New York: W.W. Norton, 1971.

Dad- Son.. I disagree. One cannot just come up with a generalized mathematical formula in any form of architecture. There are many external factors that makes the grid efficient as it is. I am sure Palladio must have considered other values to come up with those geometrical proportions. And secondly, Palladio never claimed to have a perfect formula for villas. It was Wittkower's analysis on Palladian villas that made him conceive that Palladio was using a mathematical formula. He wrote that Palladio had come up with a perfect geometrical pattern for the architecture of 'villa' , which he used to adapt and tweak a little as per the needs of the client's requirement.[3]

Donald does not believe it. He doesn't want to believe it. After all, he has been working on this one principle for all his time in the school of architecture.

Donald- I know it was Wittkower dad.. He clearly mentions in his book that Palladio always worked with a fixed set of rules and proportion for most of his villas in his fifteen year time period.[2] How can someone like Wittkower be wrong in analyzing that?

Dad- Wittkower wasn't wrong. He just did an incomplete job. He studied Palladian works only through the lens of grid system. He could done a better job if he had considered other factors like the humanist values influencing the system.

Donald- No dad. Even Le Corbusier used grid system as his basis of design. In fact, Collin Rowe writes about the similarities between Palladio's 1550's built Villa Foscari with Le Corbusier's 1927 built Garches Villa that could be identified formally.[4] How could have Corbusier come up with a similar mathematical proportion to that of Palladio 400 years later, if it wasn't effective?

Dad- Collin Rowe was a student of Wittkower in 1945-46. Heavily influenced by Wittkower, Rowe ignores the differences between the two buildings, and tries to manipulate only by presenting similarities between the two buildings. He ignored the dissimilarities like Palladio utilized pyramidical superstructure which amplifies the volume of the inside, Corbusier used flat surface, diminishing the volume of the house.[5]

Donald- But dad, that is the part of geometrical manipulations. Palladio's was an additive process while Corbusier's was subtractive.[6] Rowe also mentions that mathematics is the basis towards finding an ideal proportion that can be found in nature.[6]

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3. Wittkower, Rudolf ed. "Principles of Palladio's architecture" In Wittkower, Rudolf ed., Architectural principles in the age of humanism, pp. 71 New York: W.W. Norton, 1971.
4. Rowe, Colin ed. *"The Mathematics of the Ideal Villa".* Cambridge, pp. 3 Mass: MIT Press, 1971.
5. From 1945 to 1946, Colin Rowe was instructed by Rudolf Wittkower at the Warburg Institute (Herbert Muschamp, "Colin Rowe, Architecture Professor, Dies at 79," New York Times, November 8, 1999, http://www.nytimes. com/1999/11/08/arts/colin-rowe-architectureprofessor-dies-at-79.html [accessed November 13, 2015]).
6. Rowe, Colin ed. *"The Mathematics of the Ideal Villa".* Cambridge, pp. 7-8 Mass: MIT Press, 1971.

Donald- But dad, that is the part of geometrical manipulations. Palladio's was an additive process while Corbusier's was subtractive. Rowe also mentions that mathematics is the basis towards finding an ideal proportion that can be found in nature.[7]

Dad - Well, you know Greg Lynn was a student of Eisenman, and Eisenman a student to Rowe. But they weren't blindly influenced by their teachers. They always had their own rationale and opinion. Lynn speaks against Rowe's theory and writes that Rowe being influenced by Wittkower, tries to compare transhistorical villas mathematically without even considering other external factors such as humanist values.[8]

Donald- Are you saying that Rowe was influenced by Wittkower blindly and had no rationale? He was influenced because Wittkower wasn't wrong! Wittkower writes in his book, *'Architectural Principles in the Age of Humanism' and i quote:* "What was in Palladio' s mind when he experimented over and over again with the same elements? Once he had found the basic geometric pattern for the problem "villa" he adapted it as clearly and as simply as possible to the special requirements of each commission. He reconciled the task at hand with the "certain truth" of mathematics which is final and unchangeable. The geometric keynote is, subconsciously rather than consciously, perceptible to everyone who visits Palladio's villas and it is this that gives his buildings their convincing quality".[9] This tells that one doesn't really need to consider other values while designing. Mathematics is complete by itself!

Dad- I disagree. Lynn argues that Wittkower came up with a universal regulation that he falsely believed was a central theme for all of Palladio's villas, disregarding all the other aspects. Which was not an ideal structure used by any of his villas.[8]

Donald- Oh dad! Lynn is no God! Are you referring to Wittkower's, 'Twelfth Villa' diagram? Wittkower had indeed found the perfect mathematical formula; which he even conceptualized it as 'The twelfth ideal villa' suitable for all the villa designs.[8] It was also used as a template by many later architects, which proves it was successful. In fact today, architects are able to challenge the traditional works of the so-called unchangeable models, by using Grids as the medium.[10]

Dad- Son, this is what i fear. Rowe's model of ideal villa is also being insidiously utilized in computational design processes. This digitalization of design techniques is becoming a universal rule for every architectural design. There is an urgent need to give this a rethought where one does not reduce the complex structure to a mere mathematical system, but connects with cultural, historical and various other architectural customs,

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7. Rowe, Colin ed. *"The Mathematics of the Ideal Villa"*. Cambridge, pp. 7,8 Mass: MIT Press, 1971.
8. Lynn, Greg ed. *"New Variations on the Rowe Complex,"* pp. 39. ANY: Architecture New York, No. 7/8, Anyone Corporation, 1994.
9. Wittkower, Rudolf ed. "Principles of Palladio's architecture" pp. 72. In Wittkower, Rudolf ed., Architectural principles in the age of humanism, New York: W.W. Norton, 1971.

that would result to an emergent form of mathematics.[10]

Dad- I refute both Wittkower and Rowe's analysis. Their platonic approach with a fallacious belief on mathematics was against the evolution theory of Charles Darwin, where one cannot just create a prototype of a species. Even Kyle Miller argues that Wittkower's concept is flawed and that his project considers a wholesome conceptualization of design that is irreducible.[11] She came up with a more wholesome and systematic design proposal named 'The Thirteenth Villa'.

Donald- If they were so wrong, why am I given this assignment at the first place? And why is it not based on Miller's 'Thirteenth Villa' instead?

Dad- Because you have just begun your school. While Wittkower ignores the individual characteristics of Palladio's villas to come up with his concept of a twelfth villa, Kyle "cancels the ideal from the original eleven to yield a composite variant".[11] It demonstrates that architecture is a result of constant interaction between history and design, where the evolution of the issues can be traced back to the lineage of architectural design.

Donald -Dad! you should read the chapter 'Grids' again from the book '*Possible Mediums'*. It states that Grids can also be used to produce 3D forms with the help of additive and subtractive means. Grids can also be exploited and re-arranged to come up with new possibilities which otherwise gets restricted into fixed number of articulations.[12]

Dad - I remember that son.. I think you missed the Introduction from the same book. John McMurrough has vividly explained that medium is just a state of intermediacy, which allows the idea to become a reality.[13]

Donald- Forget it Dad! It is 3 a.m. now! Will you allow me to finish this and sleep for some time?

Dad- Oh! My bad son.. I din't realize the time! We can talk about it some other day. Good luck with your project!

Donald- Be ready to talk against Rem Koolhaas's ideas on grid next time, if you stay this stubborn![14]

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10. Lynn, Greg ed. *"New Variations on the Rowe Complex,"* pp. 42. ANY: Architecture New York, No. 7/8, Anyone Corporation, 1994.
11. Miller, Kyle ed. *"The Thirteenth Villa"* pp. 93. Journal for Architectural Education, 70:1, March 2016.
12. Bair, Kelly, Kristy Balliet, Adam Fure, Kyle Miller eds "Grids" In Bair et al. eds., Possible mediums, pp. 64. NewYork; Barcelona: Actar Publishers, 2018.
13. McMurrough, John. *"Introduction"* In Bair et al. eds., Possible mediums, 21-28. NewYork; Barcelona: Actar Publishers, 2018.

14. In his book "Delirious New York." *Jae* 32, no. 4 (1979): 32, Rem Koolhaas writes, “The grid is, above all, a conceptual speculation…in its indifference to topography, to what exists, it claims the superiority of mental construction over reality”.

References

1. Bair, Kelly, Kristy Balliet, Adam Fure, Kyle Miller eds *“Grids”* In Bair et al. eds., *Possible mediums, 61-68.* NewYork; Barcelona: Actar Publishers, 2018.

2. Wittkower, Rudolf ed. “Principles of Palladio’s architecture” In Wittkower, Rudolf ed., Architectural principles in the age of humanism, New York: W.W. Norton, 1971.

3. Rowe, Colin ed. *“The Mathematics of the Ideal Villa”*. Cambridge, Mass: MIT Press, 1971.

4. Lynn, Greg ed. *“New Variations on the Rowe Complex,”* pp. 38-43. ANY: Architecture New York, No. 7/8, Anyone Corporation, 1994.

5. Miller, Kyle ed. *“The Thirteenth Villa”* pp. 91-95. Journal for Architectural Education, 70:1, March 2016.

6. McMurrough, John. *“Introduction”* In Bair et al. eds., Possible mediums, 21-28. NewYork; Barcelona: Actar Publishers, 2018.

7. Macnair, Andrew, and Rem Koolhaas. "*Delirious New York*." *pp.* 32, no. 4: Oxford University Press (1979): 32