

The role of typology in architectural research of a renovation project

INTRODUCTION

Architecture, as an essentially complex, multifaceted discipline, has a close reciprocal relationship with research. That is research contributes to the ever-developing body of knowledge in architectural design while design delimits the scope of research. As Lucas stated: "How we build is informed by how we understand the world, and how we understand the world is framed by what we have built there".¹ Similarly, the relationship between methodology and research is also reciprocal. Since different research methods may focus on distinct aspects and raise different research questions, which in turn, require corresponding methods to solve.² Accordingly, research-methodological awareness is fundamental in architectural design. There are a variety of heuristic techniques for architects to approaching the world, and the interpretation and implementation of them would guide and shape the entire design process. Therefore, to optimize the precious resources spent on research, it is pivotal for architects to clarify the purpose and determine appropriate methodologies at the beginning of a project and continuously reflect, consolidate and sublimate during the whole process.

The course Lecture Series Research Methods not only enriched my knowledge of various methodological apparatuses, but also raised my awareness of combining different approaches to achieve a more comprehensive understanding on architectural design. The main focus of the lecture series stand on qualitative research with a systematic view of different methodologies looking into the society, human, culture and material, etc. By digesting and comparing the theories from multiple schools of thought, some of which cover even wider areas than architectural domain, I could broaden my exploration and develop my own collection of methods for specific projects.

For my graduation project, I chose to renovate the Academic Medical Centre (AMC) in Amsterdam, the largest academic hospital in the Netherlands. As a student of Architectural Engineering, who highly values inspiring technical possibilities and engineering thinking, I would like to explore the architectural topic from a broad spectrum of disciplines. Hence, my research will involve both architectural studies about social anthropological problems and scientific inquiries into technological innovations. The former starts with qualitative research and helps to frame, inspire and trigger researches in the later technology field. Arguments would naturally come of analysis through drawing, diagraming, modeling and

¹ Lucas Ray, *Research Methods for Architecture*, (London: Laurence King Publishing, 2016), p. 7-21

² David Wang and Linda Groat, *Architectural Research Methods* (Hoboken: John Wiley & Sons, 2013), p. 10,63.

reading, etc. Meanwhile, technological researches require a number of quantitative researches such as data collection and scientific calculation to investigate the feasibility and potential improvements in architecture. This thesis mainly focuses on the discourse of the former part, which to be specific in my graduation thesis is, the role of typology in renovation and transformation of the AMC. As a public building with profound background, typological approach along with other methodologies would be instrumental to dissect its value and conceive the future.

RESEARCH-METHODOLOGICAL DISCUSSION

In general, my research about the AMC is conducted following a typological thought, in which the inherent rule and principles behind the current situation, the relationships between the building and its urban context, and a continuity from the profound history to a radical future are considered holistically. Specific methods were adopted with an incorporation of other epistemes, such as phenomenology for space observation, praxeology for tracing the cultural background and taxonomy for information processing.

Typology, which commonly means the study of types, has multiple interpretations in various disciplines. Even from an architectural perspective, the term “building typology” could be understood from two standpoints: first the function and second the form. The meaning of typology has been controversial for decades and ever changing through the history. Nonetheless, the episteme of typology comprehended by current architects is generally based on the 18th-century architectural theorist Quatremère de Quincy’s definition of type. By distinguishing the word “type” from its synonym “model”, De Quincy stated that type is an elementary principle, the internal form-structure of an object that originates from a preexisting source, yet allows further developments and evolutions.³ Different from the precise and rigid “model”, which begets complete copy and imitation, type is much more vague and abstract, usually serves as a rule for the given model.

Analyzing such a massive building as the AMC, it is essential to look beyond the superficial form of the building to perceive the inherent rule, which coincides with the significance of typology. In addition, British architect Alan Colquhoun drew an analogy between architecture and language. He indicated that similar to the philosophy Tarski’s semantic theory about metalanguage and object language, the design languages in architecture also need to be distinguished into different levels of hierarchy.⁴ In this case, typology could be generalized as a metatheory that dissects architecture via a unique layer of “meta” and services for object design. Hence, through a typological research of the AMC, interferences from its current appearance, style and program would be eliminated, while the essential characters could be extracted and served as a set of generative tools guiding the entire design process.

Emphasizing on the internal essence, however, does not mean that research through typology would isolate the object of study. Virtually, typological thinking cannot be separated from the consideration of context. According to Rossi the study of typology was based on relationships between buildings and the city. In his *The Architecture of the City*, typology becomes readily identifiable when regarding architectures as urban artifacts.⁵ As a public space closely interrelated with city life, problems that the AMC confronts ought to be managed under a wider context of the city. Besides, the city is regarded as an

³ Bernard Leupen, *Design and Analysis* (010 Publishers, 1997), 133.

⁴ Alan Colquhoun, “Typology and Design Method”, *Perspecta* Vol. 12 (1969), (The MIT Press, 1969), 71-74.

⁵ Aldo Rossi, *The Architecture of the City* (New York: The MIT Press, 1982), 35-45.

assemblage of referential elements under the tradition of typology, which is isomorphic to architecture.

In discussing a renovation of buildings with profound background, the conundrum of inheritance of culture and living tradition is inevitable. Accordingly, the typology-based research method, which dialectically coped with the relationship between history, tradition and modernity, is an ideal fit. In the face of the criticism from Modernist architecture, Colquhoun declared that typology is not constrained by obsolete historical style. On the contrary, it treats the history and tradition in a rational manner, by evaluating and sifting, extracts meaningful substances from the past for redesigning under present context.⁶ With the rapidly developing society and everlasting emerging of new techniques, both architecture and the urban have undergone remarkable transformation. Therefore, it is necessary for the reconstruction project to break through limited perspective, seek new position for re-examination, and avoid gap between its past, present and future. That is where typology may provide inspiring revelation. In other words, the renovation quests for permanence in architecture in the ever-changing world; while type just answers by simplifying and depositing the history, collective memory and culture, and provides a permanent frame where possible change could operate within.

RESEARCH-METHODOLOGICAL REFLECTION

Etymologically rooted in the Greek verb *typto*, the word type reflects a general meaning similar to symbol, figure and emblem.⁷ The first arise of typology concept in architecture could be traced back to the Age of Enlightenment in 18th century. Systematic thinking and encyclopedias were brought out and promoted for information classification.⁸

Anthony Videler, a historian and critic, summarized typology into three currents, respectively corresponding to nature, production and the city. According to his survey, the first one came from 18th-century architectural philosopher Abbe Laugier's proposition of primitive hut. Under his theory, architectural design not only imitate natural orders, but also extend the analogy into inventing and developing process.⁹ De Quicy's elaboration of type differentiated from model also belong to this first stage. After that, Durand's emphasis on the production, where deviation of type occurred, acted as a transition to the second current.¹⁰ Emerged at the end of the 19th century, the second came from the springing up of new technologies and mass production. Le Corbusier's discourse of model deriving from production process was a clear representation.¹¹ Although the notion of type was blurred and reduced by functionalism into stereotype, which merely organized discrete human use; and suffered criticisms and rejection from Modern movement. The new Rationalists, however, revived it in the 1950s. Represented by Aldo Rossi, they regarded typology as an ontology of the city. Generally, the third one took a critical view of contemporary reality with a deep concern into history, society and culture and laid foundation for current discussions.

The aforementioned first two typologies are congenerous in their dependence of an external order, whereas the third one refers only to architecture's own nature, neither

6 Alan Colquhoun, *Essays in Architectural Criticism: Modern Architecture and Historical Change* (Cambridge: MIT Press Opposition Books, 1985), 159-182.

7 "Webster's College Dictionary" (New York: Random House, 1997).

8 Yasemin Đ. Güney, *Type and Typology in Architectural Discourse* (2007).

9 Anthony Vidler, *The Third Typology* (Cambridge: MIT Press, 1977)

10 Adil Tuncbas, *The Dialogue of Type and Model in Architecture* (2006).

11 Luke Jones, *On the 'Three Typologies'* (2017).

naturalistically nor technically. Among them, the third one is the most debatable. There are several deductions of former typologies that Rossi bounded together and stood upon. For example, the Italian historian Muratori proposed a morphological approach that understand architecture as a continuous pattern of the city.¹² Argan referred back to De Quincy's definition but pragmatically avoid its Neoplatonism. With the acceptance of the vagueness or indistinctness of the type, he sustained that type cannot determine the definite form, but is able to regulate a schema with a connection towards urban culture.¹³ Following Argan, Ernesto Rogers took the identification of a type as the starting point of design and treated the process as an approach "from the abstract type to the precise reality".¹⁴

Different from Rossi's deployment of type as a tool for understanding the architecture from urban perspective and restoring their coherency in the history, the role of type for Venturi seems to be reduced to image. For him, the type is much more a recognition. Since radial changes in the society as well as innovations in technologies break the continuity, architecture reflects the fragmented reality.¹⁵

Furthermore, although there is no obvious supporting analogy, the development of typology is not isolated from other methodologies. Take phenomenology as an instance. the recognition of correlation between urban and buildings was also researched by Christian Norberg-Schulz.¹⁶ Moreover, measures such as observing, experiencing and documenting under the framework of phenomenology are instrumental for capturing the essence of a space, where typology stand upon. Other epistemes such as taxonomy, analytical psychology, and praxeology, etc. are also deductive, supplement or parallel with the study.

Such a variety of interpretation of typology did not hold back its development, but rather facilitated a more extensive use in design. Personally, my adoption relied on a combination of Rossi's and De Quincy's theories.

To study about the carrying value of the existing AMC, the system of classification focusing on the internal form-structure suggested by Quincy will be implemented. Simultaneously, Rossi provided a holistic perspective that architecture is an organic unity of its environment, users and the society; and the time it experiences from the past history to the future is an impartible continuum. This can also be considered as a context-leading approach described by Lucas. According to his words in *Research Methods for Architecture*, a typology could be established by regarding context as a type and learning from cases following similar patterns.¹⁷ In practice, it involves multiple methods like examining historical literature, abstracting principle formal characters through diagrams and models, urban analysis and case studies. In addition to the basic elements related to the history, Rossi's concern of the cultural conventions claims a specific attention to the life styles and psycho experience of stakeholders. Advocating a restore of collective memory in the history, the clear conscious and proper understanding of it is primary. For this reason, field visit, interview, literature study and mapping ought to be conducted for further design.

12 Rafael Moneo, "On Typology", *Oppositions* (Cambridge, The MIT Press, 1978), 35.

13 Giulio Carlo Argan, "On the typology of architecture." *Architectural Design* 33:12 (1963), 564-565.

14 Rafael Moneo, "On Typology", *Oppositions* (Cambridge, The MIT Press, 1978), p. 36.

15 Rafael Moneo, "On Typology", *Oppositions* (Cambridge, The MIT Press, 1978), p. 39-45.

16 Brendan O' Byrne, Patrick Healy, "Architecture and Phenomenology", *Footprint* 2:2 (2008).

17 Lucas Ray, *Research Methods for Architecture*, (London: Laurence King Publishing, 2016), p. 11-12.

In view of the potential transformation of the AMC in accordance with the changing society, the reflection on human experience is a core connection with the past. By analyzing the existing culture and lifestyles and concluding them into a basic “type”, it would be more eloquent and convincing to conceive the future scenario. Generally, the process of design through typology is a transformation of inexpressible feelings and values into tangible types and ultimately a re-composition of them into a building.¹⁸ To be specific in my graduation project, this typological research ground a rational base for the introduction of innovative techniques and transformation, which helps to link the historical and cultural background of the AMC with its future development.

POSITIONING

For Architectural Engineering studio, research is an ongoing reciprocal activity along with the whole design process. It is named design by research as well as research by design. My posture on research is in accordance with this. Researches about the AMC and its related types assisted the position of design focus based on a comprehensive consideration of the history, culture and society and further formulated the progression. It is crucial to establish a dialectical view of the existing values towards future changes and new technologies through typological thinking especially for this renovation project.

On the one hand, the lecture about heuristics presented by Jorege Mejia enlightened me on the importance of research and its relationship with architectural design. He indicated the obligation for MSc students to be skilled in the acquisition of knowledge. Moreover, the whole design process from setting up purposes, exploration on form and technique to the presentation and communication are inseparable with heuristic research, which is an interactive or “hands-on” learning method. Stressing on the objective culture rather than subjective opinions, researches engaging with users and social science are specifically pushed by the anthropologist Kenneth Pike.¹⁹ The ideology of typology is conformed to this heuristic mode of thinking. Besides, its deficiency due to the vagueness in origin could be complemented by hybridizing other approaches following the concept of heuristics to support a socially-conscious and culture-based design.

Robert Alexander Gorny’s lecture on typology, on the other hand, brought me a systematic cognition of this methodology. Through comparison with Morphology, Taxonomy and Topology, Gory expounded the concept of typology articulately. Furthermore, he differentiated researches into quantitate and qualitative (*qualitate*). Focused on the qualitative role, his presentation gave an overview of the history and modern development, which underlined type’s generativity. Identical to his arguments, I believe that type is a versatile tool flexible to a variety of problems rather than a general rigid categorization.

Nevertheless, balancing from the view of generality and specificity, the vagueness and abstraction of typology inevitably appears to be deficient. This brings the necessity of integrating other ideologies. To be specific, there is a complementary relationship between typology and anthropology when researching culture, social structure and human behavior.²⁰ Moreover, the hybrid of phenomenological and typological analysis in Campos’s research indicated that the empirical observations and sensitive experience via

¹⁸ Aldo Rossi, “An Analogical Architecture”, *Theorizing a New Agenda for Architecture: An Anthology of Architectural Theory 1965–1995*, edited by Kate Nesbitt (Princeton: Princeton Architectural Press, 1996), 345-352.

¹⁹ Thomas N. Headland, Kenneth L. Pike & Marvin Harris, “Emics and Etics: The Insider/Outsider debate”, *Frontiers of anthropology*, Vol. 7 (California: Sage Publications, 1990).

²⁰ Melford E. Spiro, “A typology of social structure and the patterning of social institutions: a cross-cultural study.” *American Anthropologist* 67.5 (1965), p. 1097-1119.

phenomenological approach can work in unison with typology studies.²¹ In addition to the analysis, a phenomenological perspective of view is also important when constructing the actual space to achieve specific spatial qualities and convey the memory and value summarized by typology.

In addition, the concept of assemblage brought about by Deleuze and Guattari could also be seen as a development or current variation of type. It is argued that assemblage is an “abstract machine” essential for intrinsic determination through variation.²² Holding a similar manner towards changes in the society, the notion of assemblage could also be used in analyzing and redesign of the AMC. Because of its monolith size and complex programme, the AMC building resembles a micro city assembled by composites that could be abstracted.

In current field of architecture, there are plenty of buildings with rich background yet drop behind the renewing needs of the changing society. Typology along with other epistemes could provide a developing, long-term perspective for architects to treat with both existing buildings that need renovation and new architectures conceived for the future. Facing the transformation in culture and emerging new technologies, we as architects ought to not only accept the knowledge scientifically, but more importantly, maintain the coherent value from historical culture and integrate it into the new design.

²¹ Inês Daniel de Campos, *Phenomenological Analysis in the Traditional Housing Architecture* (2017).

²² Goodchild, Philip. *Deleuze and Guattari: An introduction to the politics of desire* (London: Sage, 1996),44-65,

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