Case study research in theory

AN ASSESSMENT OF A GRADUATION RESEARCH METHOD
RESEARCH METHODS (AR3A160)

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I   INTRODUCTION

Research within the field of architecture is not definable by one definition, but it has multiple sides to it, just as the subject itself. Doing scientific research means that you try to find answers in a verifiable and consistent manner. That does not mean that answers are non-debatable, but by doing the research transparently the answers to a research question can be valuable for further research into the subject (Lucas, 2016).

      The architectural field of research is broad and involves a lot of different research methods. The scientific side of architecture can be seen as a combination of a lot of other scientific disciplines. It ranges from knowledge of structure and materials towards anthropology. Architectural science is a social science as well as a physical and technical science (Gifford, 2007, p. 2). Knowledge of the research methods and heuristic techniques can help you do better research.

During this course I gained another view upon research methods I already used. It became clear to me that it has more scientific relevance than I initially thought. Also, heuristic techniques has increased added value for me, as a practical tool to achieve sufficient result. It is however important, with using tools as heuristic techniques, that we should be aware of the reduced scientific character it has.

      The problem that can arise using these tools in the design process is tunnel vision. As the research method is not fully developed, the conditions of research are likely to be made in favour of the desired outcome. When it comes to something as influential as the built environment, I do not think we can pass solid scientific research. On the other hand, aware of the scale of the built environment and the high demand of housing on the short term, a practical approach is necessary. Being aware of the non or less scientific character of these techniques, they can be a useful addition to the existing scientific research that has been done.

The graduation project is about young families in high-rise buildings. Cities in the Netherlands are expanding in a rapid pace (Centraal Bureau voor de Statistiek, 2019a, p. 7) and new space for residents need to be found within the existing city, as further expanding into the surrounding green lands is not desirable in many cases (Uytenhaak, 2009, p. 17). This results in densifying the existing city or creating high-density buildings in areas where earlier no dwellings were to be found. In the case of this graduation studio this is the Minerva harbour, an old harbour within the ring of Amsterdam.

      As stated, the number of inhabitants is rising in Amsterdam, the portion of young families herein is however decreasing (Centraal Bureau voor de Statistiek, 2019b). Young families moving from Amsterdam to surrounding municipalities or suburbs causes disbalance in the city. Families are essential for the liveability of a city. They are the cement that holds cities together, use the facilities and have large social networks (Karsten & Felder, De Nieuwe Generatie Stadskinderen, 2016, p. 220). A city with more young urban families are named to be more pleasant, more durable and more versatile (Karsten & Felder, De Nieuwe Generatie Stadskinderen, 2016, p. 7).

      Since its important to maintain young families for the city of Amsterdam, and that the future of Amsterdam is to a large extent in densifying, I conduct research into young families in high-density. While doing literature research it became clear that it is the transition from private (dwelling) to public (street) which is troubling for young families in high density. The immediate living environment has a different meaning for children of different age groups, as well as a difference size (KpVV, SOAB Adviseurs voor Woning en Leefomgeving, 2008, p. 13). In the ideal neighbourhood children grow up in a smooth flow, where their world increases in steps, providing liminal and fuzzy zones supporting young people in the transition to adulthood (Christensen & O'Brien, 2003, p. 25) (Gehl, 2011, p. 61). Many high density complexes can however not offer this smooth transition, especially older children experience problems with this, the building does not accommodate their slowly increasing world (Whitzman, 2010, p. 21).

II CASE STUDY RESEARCH

In order to research how the transition can be smoothen from private to public in a high-density building, a combination of literature research and case-studies is used. By doing literature research, the general conditions for a smooth transition are researched, as well as certain qualities for each step in the transition. These conditions were than tested on case studies with the help of annotated floorplans, descripted images and isometric illustrations. This resulted in flowcharts where each step in the transition was illustrated together with four parameters. The parameters are coloured indicating if the value was according to the earlier defined proper transition from private to public. These flowcharts where able to quickly show qualities and bottlenecks within the transition of the different case studies. The combination of drawings, images and illustration together with a consistent type of flowchart showing the full transition enabled the reveal of properties which were not visible from examining isolated elements of the transition.

This research can be seen as context led research (Lucas, 2016, pp. 11-12). The context is hereby case studies (buildings) which are examined using related literature. By examining the transition from private to public with the same parameters on the different buildings (types), a repeating pattern can be recognised (typology). This gives a set of conditions for the graduation project, qualities that a high-density family dwelling complex should contain.

Roughly seen the research consist of two parts. First there is the literature research, a text-based research. It can be seen partly as an ethnographic research, describing the needs of urban families, but also as a critical discourse, investigating what these different steps within the transition are in need of. Examples are eyes on the street from an habitable space in the dwelling (Jacobs, 1961, p. 81), different variables to promote contact (Gehl, 2011) and integrating functions instead of segregating those (Sennett, 2018).

   The second part is testing the outcome of the literature research in relation to case studies. It is a theoretical assessment of variables within these architectural projects. This is more complex than ticking boxes, in different phases of the transition from private to public parameters require different values. An example is the number of people using the space, most favourable this is increasing with every step (Christensen & O'Brien, 2003, p. 25), ensuring a smooth transition from private to public. The desired value for this parameter is therefore not set but needs to be defined on the bases of the literature research.

Describing the transition from private to public has common ground to the practise of the spatial narrative. Kim Dovey described in Tall Storeys (2008, p. 112) the importance of the first impression of a client when entering a building. Hereby he described every step with their materials and how he perceived it. In contrast to his poetic approach of describing the transition, within the graduation research it is tried to develop more objective parameters on the basis of the literature research.

   When it comes to the scientific relevance of the graduation research method, it has more common ground with mapping. It is about indicating how the transition is formed and the size and location of elements. But just as mapping is never objective and passive (Corner, 1999), so is the way of indicating how the transition is established between private (dwelling) and public (street). Diagrams in architecture show often more variables than diagrams in other research domains (Yi-Luen Do & Gross, 1999, p. 136), choosing how and which indicators to show is already suggesting towards an conclusion. In this case these are the chosen parameters to examine the different steps in the transition.

III   CASE STUDY RESEARCH IN THEORY

Doing research by case-studies has not always been standard practise, it has been named "an obscure mode of inquiry" and "not well understood" (1980's) (Yin, 2018, p. XV). This has however changed, case study research is now increasingly recognized as valuable, thus Robert K. Yin in his Case Study Research and Applications book (2018, p. XV). In this book, first edition published already in 1984, Yin tries to introduce case study research drawing from different academic and applied fields. In his book he makes a differentiation between case study research (the mode of inquiry) and case studies (the method of inquiry). It is important to notice that case studies (method) nowadays also exist outside the domain of case study research (mode). Popular uses are for example "teaching-practice case studies", a way to teach practise related information, rather than using case-studies for research (Yin, 2018, p. XXI). Because of the existence of nonresearch case studies, when using research case studies, one should openly promote the more scientific character one wants to achieve.

Yin links case study research to both variable-based and to qualitative research. Different variable approaches tend to conclude in defining a recognised pattern or a typology at a holistic level (Yin, 2018, p. XXIII), similar to the use of parameters in describing the different steps from private to public. At the same time Yin is critical in approaching case studies as a variable approach, especially because of the small quantities in which case studies often exist (Yin, 2018, p. XXIII). More important is the holistic approach that comes with case studies, it's this approach which makes this research type stand out. Instead of large number over a lot of cases, a case studies research investigates extensively these separate cases, revealing also patterns within one case.

The link between qualitative research and case study research is more clear. Case study research is named as one of the ways qualitative research can be conducted (Creswell & Pth, 2017). According to Yin, caution is needed when approaching case study research as qualitative research, as case study research is in need of its own customized research procedures. It is depending on the research domain and the type of case study research if this comparison is valid, treating case study research as its own type is therefor recommended (Yin, 2018, p. XXIV).
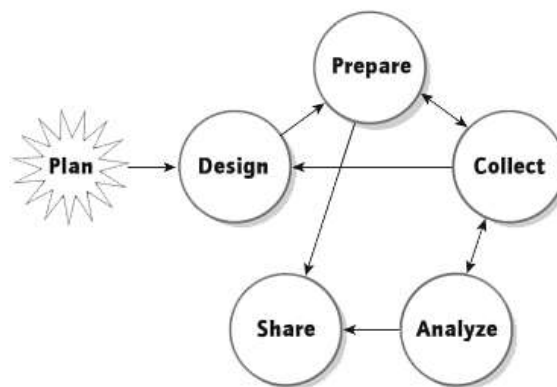

Illustration 1: the process of doing case study research (Yin, 2018)

The process of doing case study research is a linear but repeating process. The process is initiated with a plan. In many situations a case-study is not the optimal way of researching, a good evaluation should be conducted in order to determine this. Downsides and other considerations should be passed before the design phase of case study research is initiated (Yin, 2018, p. 4).

The design phase is the first step in an iterating circle. Goal of this phase is to identify the different cases and establish the logic of the case study research. In many cases it can be helpful to provide a theoretical framework in which the case study research is designed (Yin, 2018, pp. 34-38). In the graduation research this is done by literature research. Important is to also identify the boundaries of the different cases, this needs to be done consistent and in such a way that the research questions match the given case size. For architecture the context can be of great

importance in addition to the building itself.

The next step is the preparing of the collection of the case study evidence. Creating a systematic and consistent approach can hereby support an objective research approach (Yin, 2018, p. 80). Important to notice is the complexity architecture brings with it, as it is a social science as well as a physical and technical science (Gifford, 2007, p. 2). Developing this systematic approach can therefor be seen as subjective, because within this approach different elements are privileged over others, as the complexity of architecture is not comprisable in one case study research. It's this step which makes the scientific value of case-study research similar to that of the earlier named mapping.

Collecting the evidence is the next step and is the assembling of the findings done in the case study research. Documenting evidence in a comprehensive way is hereby crucial towards analysing the outcome. When collecting evidence, it is important to maintain the chain of evidence and document the way the data is achieved, as this shows the scientific value of your findings (Yin, 2018, pp. 134-135).

By displaying data in different ways, the outcome of the research can be analysed. In the graduation research there is for example, among other things, the use of flowcharts, showing the parameters of each step consistently for each case. By doing this, patterns, insights and concepts may arise. In this step explanations and interpretations of the data can be sought (Yin, 2018, p. 164). As with any other scientific research, it is important to critical reflect on those findings, taking in account the way the data is perceived and how it is displayed.

When conclusions are shared, it important to not only share the outcome of the analysis, but also the way the evidence is collected. This enables peer review and a general assessment of the research value.

IV   POSITIONING

As reflected upon earlier in this writing, case-study research has resemblance with multiple research approaches. In the Future Practice: Conversations from the Edge of Architecture book (2012), Rory Hyde sets forth seventeen conversations with practitioners from the worlds of multiple research domains. Each practitioner represented a potential position for future practice in architecture. Multiple positions can be seen as related to the graduation case study research; they will be discussed here.

The first position is that of the Massive Changer. Which is able to, according to Bruce Mao, "disconnect the methodology of design from the visual, to look at the design as the capacity to produce a specific future" (Hyde, 2012, p. 30). In a way the chosen approach of looking at the transition from private to public, not evaluating upon isolated design choices, is a way to judge how the building is functioning, as a total. The capacity to produce a specific future is herein enabling a smooth transition from private to public. The grandiloquence tone of the "massive" changer does however not fit the weighted and subtle research conducted.

Another position with resemblance to the research done in the graduation project is that of the Civic Entrepreneur. Especially the critics of Indy Johar, a protagonist towards the architect as civic entrepreneur, upon the internal debate within the field of architecture show similarities. According to Johar, the focus is too much on the image and semiotics of architecture; "the image as tool to raise capital financing for buildings" (Hyde, 2012, p. 46). Johar is in favour of an architectural firm active in more disciplines as design only. In the graduation project, research is conducted to the capacity of a building (in this case the transition from private to public), rather than the image or iconic value a building has.

This capacity of enabling the transition from private to public can be seen as a community enabler, as one of the purposes of this new type of transition in high rise is too improve contacts between neighbours. The community enabler as type of architect tries to connect people by changing policies or changing the set-up of elements (Hyde, 2012, p. 170). The changing set-up of elements is researched in this case.

The most resemblance is however not found within the book of Future Practice, but in the theories of Jan Gehl. Around the 1960's the standard practice for urban planning drastically changed. Modernism became dominant and the cars determined to a large extend the view upon the street. The care for the people who made use of cities - which for centuries were cared for by tradition and experience - was completely behind. In Life Between Buildings (First published in 1971), Jan Gehl explained why caring for people is crucial for the quality of cities in the 21st century. Urban transformations and mobility strategies from Denmark, the US, Australia and Russia served as an example of this new people-oriented direction in city planning (Gehl, 2011).

Gehl places a special focus on improving the urban infrastructure and optimizing the quality of life for people, especially pedestrians, cyclists, senior citizens and families. The life between buildings is named by Jan Gehl to be more important than the buildings and spaces itself (Gehl, 2011, p. 29), most of his theories are therefor pointed at this "in-between" space.
The graduation research can be seen as an extension of the work of Jan Gehl. Where Gehl his focus was on the street, the focus here is on a smaller scale, building level. The optimised, fast, transition from private to public is one of the key elements of the research and can as well be seen as a result from modernism. Instead of approaching high-rise as stacking dwellings as optimized as possible, the life between the dwellings should be addressed. The life between dwellings in addition to the life between buildings.
Another element which shows the resemblance is the method of research. Gehl makes use of case studies. By abstracting the cases and comparing them, he's able to test an hypothesis or develop a theory. The approach used in the graduation project of researching by annotated floorplans, descripted images and isometric illustrations offers a similar approach.

To conclude this paper, it can be stated that the described type of case study research has common ground with mapping, when it comes to scientific value. Especially choosing how and

which parameters to show can be already suggesting towards a conclusion. It is also important to notice that case studies (method) nowadays also exist outside the domain of case study research (mode). Because of the existence of nonresearch case studies, when using research case studies, one should openly promote the more scientific character one wants to achieve. The research method is context led; the context is hereby case studies (buildings) which are examined using related literature. Caution is needed when comparing case study research to other research methods, as case study research is in need of its own customized research procedures. It is depending on the research domain and the type of case study research if any comparison is valid, treating case study research as its own type is therefor recommended. Most common ground when positioning this type is research is found within the theories of Jan Gehl, use case studies to research the life between buildings, or the life between dwellings in this case.

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