HOW DID THE SIGNIFICANCE OF KALI SEMARANG CHANGE OVER TIME AND WHAT CAN BE DONE TO RE-ESTABLISH A RELATIONSHIP WITH IT TODAY?
Combining and contextualizing research methodologies as a part of the creative process - a non-linear approach to research and design.

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I   A NON-LINEAR PROCESS

The architectural discipline is a complex combination of a multitude of professions, perspectives, cultures, environments, socio-political-economic issues and so on. Having a thorough understanding of each of these domains, in its given context, is vital to start a project – be it urban, landscape, architectural or social. But each of these different domains like culture and politics require different research methodologies to aid the design practice. The Research Methods course provided me with the knowledge and understanding of these various methods and approaches, not only theoretically but also in the applicability of these in practice - which methodology might be suitable to investigate a certain domain or not. With these tools at hand, I was able to apply a combination of methodologies to research the components of my research question that touch upon both the tangible and intangible aspects of heritage and architecture.

The studio of the 'Shared Heritage Lab of Semarang', deals with positioning heritage and architecture in a global context due to the shared history between Netherlands and Indonesia. Dutch colonization that lasted over 300 years deeply impacted not only the politics and socioeconomics of Indonesia, but also the built environment. Traces of the social segregation that resulted are still perceived in Semarang. However, there are urgent environmental (both built and ecological) issues that need to be addressed – land subsidence, flooding (coastal and rainwater), urban and heritage decay, lack of accessibility to water and, poor water and waste management.

With the above in mind, my research process involved three main components in different time frames – pre-site visit research, on-site/ fieldwork research and post-site visit research (Fig 1). Through the preconceptions[1] I had from the preliminary research that was conducted to understand the context of Indonesia and Semarang, my research question centered on the cultural response to heritage and the role of heritage in the smart city movement that the government was planning to implement. However, arriving in Semarang for a three week long fieldwork, my preconceptions were contested, resulting in my research question becoming more specific to an identified problem – the lack of accessibility to water and poor waste management centering on the neglected river (Kali Semarang) in the proposed sites. This meant a re-evaluation of the research that was done prior to the site-visit, categorizing the relevance of the research, and conducting further research during and after the site visit, that was more specific to the updated research question.

The Heritage and Architecture chair's approach to architectural design is a combination of cultural values, technology and design that are in constant motion. It highlights that the process for heritage architects is non-linear, and the 'creative curve' shifts due the large time frame required for research when it comes to re-designing a building[2]. My process echoes those outlined in my studio's general approach. The research process, much like the design process, is non-linear and my perceptions and conceptions changed which meant that the research also had to be re-evaluated to determine the relevance of it. This outlines my approach to the different methodologies used.
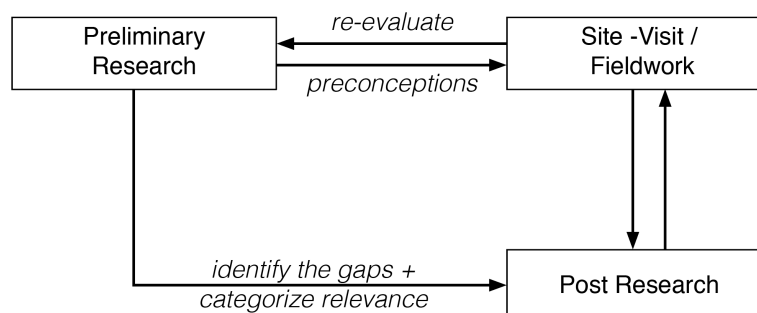

Fig 1. A non-linear process

[1] John Zeisel uses the words 'inspiration', 'imagination' and 'intuition' to explain this. Linda N Groat and David Wang, *Architectural Research Methods* (John Wiley & Sons, Inc, 2013) 167

[2] , Marieke de Kuipers and Wessel de Jonge, *Designing from Heritage: Strategies for Conservation and Conversion.* Delft, (Netherlands: TU Delft, 2017) 27

II   HISTORY AND ETHNOGRAPHIC PRAXEOLOGY

In Heritage and Architecture, as the name implies, studying the history of the context in which the project is situated and the chosen site/s of intervention is key. In our studio, the Shared Heritage Lab of Semarang, it was important to not only research into the chosen context, Indonesia, but also research into the history of the Netherlands as the two are interlinked due to their shared history as a result of colonization. The cultural turn, which rejected the possibility of totalized and single histories, recognizes that history can be narrated from multiple points of view[3]. This was an important factor for conducting my historical research. Using maps from both Dutch and Indonesian archives, historical photographs, literature and historical accounts from both Dutch and Indonesian sources and a preliminary 'chrono-mapping' of the trade, colonial and national history provided a base for the preconceptions I came to, prior to the site-visit.

My first impressions of the site led to the re-development of my research question – how did the significance of Kali Semarang change over time and what can be done to re-establish a link to it today? This gave me a base to identify the methodologies I needed to use to further my research on-site, and post-site visit (together with the historical research conducted). I identified three different scales to frame my design research on: the macro scale - being the river along proposed sites, the meso scale – being the built heritage that was my main architectural intervention, and the micro scale – being the urban injections along the river bank that could aid in improving the accessibility to water and waste management. In all these scales, the common stakeholders identified were community and authorities. With these in mind, ethnography and praxeology were identified as a combined methodology: ethnographic praxeology[4], since the future design project aspires to change with use and time, by the identified stakeholders. This research was viewed as a part of my creative process[5], as it constantly gave me ideas and also helped me reject ideas where research was constantly being evaluated with design in mind.

My understanding of ethnography stems from its close relationship with anthropology and social sciences, where the objective is to understand some of the small things that can have a more significant impact in a global sense[6]. However, the longitudinal nature of ethnography implies its need to be supplemented with another methodology considering the time frame of the thesis year. The study of people is best complemented with praxeology, the study of human action/activity. By coining enthnography and praxeology, a research methodology that is more appropriated for design practice can achieved. With the advent of technology and the plans for Semarang to become a smart city, it was necessary to understand the human aspect of my research question (and also aid the impact assessment). This provided the base for answering my research question through design. Ethnographic praxeology was ideal for fieldwork that needed to be done in Semarang – by observing, studying and analyzing, documenting and interviewing people, it provided insight into the social context of the site and identify areas for opportunity, critical issues that needed to be addressed or be mindful of, and the needs of the community that could be creative triggers[7].

III   FROM ANTHROPOLOGY AND SOCIAL SCIENCES TO TECHNOLOGY

Lucius Burckhardt, chairman of the Werkbund and a professor at several architecture and design schools throughout the 70s to the 90s, describes design as an ensemble of relations between human beings

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[3] Linda N Groat and David Wang, *Architectural Research Methods* (John Wiley & Sons, Inc, 2013) 176.

[4] "Starting with the concept of ethnography in its postcolonial sense, it proposes a holistic approach to the added value of that which could be called "ethnographic praxeology" in design" Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 3

[5] The description of this process as Zina O'Leary puts forward, "calls for fluency in and flexibility in handling new and old ideas, or engaging in remote associations between elements that would not ordinarilty be linked" is most relevant here. Linda N Groat and David Wang, *Architectural Research Methods* (John Wiley & Sons, Inc, 2013) 167.

[6] In keeping with the idea of the Shared Heritage Lab where the the local and the global is thought of holistically. Ray Lucas, Research Methods for Architecture (London: Laurence King Publishing, 2016) 39

[7] Nova, Nicholas. *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 7

set within an environment[8]. Alain Findeli argued that the focal point of every design model produced since 1850 had evolved from the object to the process to the actor[9] and this is especially true since the emergence of 'smart' technology and social media. Design heritage has often focused on objects than the people thus where ethnography is concerned, the use of this methodology in architecture is a relatively new concept. Herbert Simon, a professor at Carnegie Mellon University and specialist in psychology, sociology, cognitive sciences and philosophy of sciences, conducted extensive research in artificial intelligence and published his theory in The Sciences of the Artificial in 1969. His basis lay in examining the paths taken in decision-making, introducing that artifacts were interfaces linking man and environment – design produces 'things' that bind people to their social-technical-aesthetic contexts[10]. He underlined that social negotiation was at the core of every act of conception or creation[11]. Praxeology is rooted in its focus on the human – the user, where the built environment is regarded as a stage for everyday practice[12]. In the historical context (especially in the colonial period in relevance to Indonesia) social and political factors influenced the thinking just as Bruno Taut highlighted in his written work[13]. Politics and socio-economics were important factors in architectural design in the colonial period, which was evident, especially in the context of Semarang, through historical research. Historical research thus becomes an important methodology to understand the roots behind the built heritage, providing insight and also highlighting the gaps that exist in present day - in a post-colonial independent Indonesia, community should become a focus. Praxeology and historical research, then, become interlinked to have a comprehensive understanding of the context an architect is working on. Praxis becomes a useful method in researching a non-familiar environment in the context of heritage and architecture. Much like CIAM used the grid as an analytical method for comparison, praxeology combined with ethnography provides a base to compile a value matrix for heritage and architecture.

Introduction of new techniques in anthropology through analyzing aerial views where the landscape is viewed as a visual guide[14], ethnographical/praxeological research evolved with the progress of technology – new software and apparatus' for mapping, not just the physical landscape but the people inhabiting it and their movements in relation to it, opened new possibilities for ethnographic praxeology. Where historically these methodologies were primarily focused on the locale, in present day the implications of these have become global due the instant availability of information on a worldwide scale. Additionally, the ability to use artificial intelligence to model and predict behavioral patterns, user preferences etc. contribute to Zina O'Leary's idea of research being a part of the creative process alongside design[15].

In the practice of heritage and architecture, assessing the values of the context and heritage in question (value matrix) is vital for the future of the design project. These values are analyzed over multiple scales, ranging from urban, architectural, interior, social, economic, and political over a time period from historical to present day. Conducting research on all these scales requires different methodologies – there is no 'one size fits all' in this. This understanding was vital to informing my research – my pre-site visit methodology had to shift on-site (fieldwork) and then again off-site in order for me to fully grasp exactly what I was conducting research on. My research question concerns the change that Kali Semarang went through, eventually ending in its current state – this is linked to the social dynamics of the Dutch and the locals. Herbert Simon's theory becomes especially relevant here.

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[8] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 16
[9] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 17
[10] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 16
[11] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research*. (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 16
[12] Presented in the Lecture Series on Research Methods, *Talk 2 on Investigating Spatial and Social Practices*, TUDelft, 2019
[13] Esra Akcan, *"Toward a Cosmopolitan Ethics in Architecture: Bruno Taut's Translations out of Germany."* (New German Critique, no. 99 (2006): 7-39. www.jstor.org/stable/27669175.)
[14] For example, the aerial photo taken of El Hank in 1953 provided a new analytical tool to conduct research into the urban fabric that could inform things about its inhabitants.
[15] Linda N Groat and David Wang, *Architectural Research Methods* (John Wiley & Sons, Inc, 2013) 167.

Design has always been a compilation of abstract theories, systems and personal beliefs as seen from the works of Le Corbuseir leading to those of Zaha Hadid. The user has never truly been in the spotlight of research and design in architecture (although the likes of Moholy-Nagy would contest this!). The theories offered by Simon and O'Leary (among many others) perceive design through the amalgamation of negotiations, dynamics, systems[16] etc. abstracting the key stakeholder a project is designed for – the user, and in my case, the community of Semarang. This implicit idea of the user becomes more explicit as technology and AI evolved in this hyper capitalist era. However, politics and socio-economics are still relevant, considering the change of role that design and architecture went through in the from of being a tool of oppression, a visible built form of power and conquer, to a reflection of change and nationalism in the context of Indonesia. These informed the problems I faced in my research – how can I objectively research on the change that Kali Semarang took or what can be done to re-establish that lost relationship with it, without being biased to my own pre-conceptions of the situation and my own responses to colonization as a Sri Lankan – a country that was also colonized by the Dutch?

IV   AID NOT CORROBORATE AND CONTEXT MATTERS

Jorge Mejia, in talk 1 of the Lecture Series on Research Methods (LSRM) highlighted that architecture is a combination of cognitive and collective disciplines. He stressed that research should not be corroborative – the point of research should not be to prove your design. In most ways, this echoes my positioning on research in the architectural and design discipline where the role of research lay in understanding the context, the stakeholders, the situations etc and not as proof of design but rather a part of the creative process itself (echoing O'Leary). In my Bachelor, I was expected to defend my designs to a point where the role of research, especially as a green architecture student, became a tool to 'corroborate' my concepts and the answer the 'why' questions often directed during critique sessions. The purpose of research then became a solution to defend the designs I had preconceived and not inform or aid the process.

In Marieke Berkers' lecture on Praxeology (talk two of LSRM), she stated that researching the built environment using this methodology should be supplemented with the historical condition of the production of this built landscape: through interviews, observations and historical analysis. This echoes the concept of ethnographic praxeology put forward in Nova's book,' Beyond Design and Ethnography: How Designers Practice Ethnographic Research'. What this also signifies is that research is a non-linear process, one that is an amalgamation of different methods in different phases of a holistic process. Typographical research or quantitative and qualitative research, and participatory observations alone cannot aid in reducing the uncertainties associated with design, which is one of the fundamentals of research in design practice[17].

Architects are becoming more and more conscious of a design's role in politics and the social. Digital technology and advancement in communication, through social media etc, has led to the blurring of context where the global public now has a say in addition to the locals. This was clearly evident in one of the most talked-about stories in architecture[18] – Zaha Hadid's stadium design for the Tokyo Olympics. The public discontentment and global outcry of the design paid a significant role in the decision of the city to dissolve the project, even though it was the competition winner[19]. The boom of commercial architecture, especially in China and South Asia, brought forward the focus on the 'user' where architecture became a 'user-centered' approach but seen through the lens of the digital. A good example of this would be the re-vamping of the

[16] Herbert Simon and Abraham Moles as mentioned in Nova's book, and Zana O'Leary as put forward by Lucas Ray in his book, contribute to the abstractions of design research where the people and their own personal beliefs, history and fears were implicit. Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research.* (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 16
[17] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research.* (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 35
[18] Paul Keskeys, *"Tokyo 2020 Olympic Stadium: How Do You Top Zaha Hadid?* - Architizer Journal," (Journal, December 17, 2015, https://architizer.com/blog/practice/details/tokyo-2020-plan-b/)
[19] The alternative proposals put forwards received just enough negative comments as Zaha's design globally, making it difficult to contextualize outcry – which is the "public" that matter? Was it important to consider the global perceptions or those of the locals where the project is actually situated in? This is where context becomes a debate to architects and design research.

Sephora shops. As Nova puts it, "*'people', 'human', "user" or 'consumer' are not equal and interpret differently the various conceptions of what matters in the design process. While the first two are vague enough to be respectful of individual's complexity, "consumer" and "users" refers to a more passive character. As claimed by one of the designers we interviewed for this book, "user isn't the right world, there's always a protagonist, a human*""[20]. This provides as an excellent reference to my position where human is the key stakeholder and so context becomes an important factor. Royston Landau wrote that position cannot be isolated form its context [21] and this is especially true when considering the human as a protagonist. Where heritage and architecture is concerned, as much as history is important, transformations and adaptations of existing architecture must echo the values identified and clearly determine who these values are important to – the human in its context (in my case, the community of Semarang) or the designer responsible (myself). Contextualizing Kali Semarang's vitality to the present day community aided in organizing my findings to assist the creative process of answering the latter part of my research question. After all, research by itself is only a part of the entire creative process where design and research are interlinked in a non-linear process; this is what I view as the course of a heritage and architecture project.

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[20] Nicholas Nova, *Beyond Design and Ethnography: How Designers Practice Ethnographic Research.* (France. ffSHS Publishingff, 2014, 978-8-89-075944-4. ffhalshs-01514264f) 29

[21] The importance of relating the position to the conversations and experiences that helped in producing it in asking why architects design the way they do as Landau notes, just as why the community treats the river as they do in the context of Semarang. Royston Landau, "*Notes on the Concept of an Architectural Position.*" (AA Files, no. 1 (1981): 111-14. www.jstor.org/stable/29543310)