

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences




Graduation Plan: All tracks

Submit your Graduation Plan to the Board of Examiners (Examencommissie-BK@tudelft.nl), Mentors and Delegate of the Board of Examiners one week before P2 at the latest.

The graduation plan consists of at least the following data/segments:

Personal information		
Name	Aisté Mankuté	
Student number	4918851	
Studio		
Name / Theme	Heritage & Architecture – Studio: Vacant Heritage	
Main mentor	Lidy Meijers	Design mentor
Second mentor	Frank Koopman	Building technology mentor
Third mentor	Hielkje Zijlstra	Research mentor
Argumentation of choice of the studio	I firmly believe that heritage is an integral part of every city's identity. Many changes are constantly taking place in modern cities, such as the revival of old and abandoned buildings or outdated apartment blocks, leading to shifts in collective memory and local identity. In addition to the cultural value of the building transformations, I also believe that, given the current environmental and renovation goals, it is very important to have the right knowledge base to carry out projects of this kind.	

Graduation project	
Title of the graduation project	<p style="text-align: center;">Activating the “glass box”</p>  <p style="text-align: center;"><i>Figure 1: Cover collage</i></p>

Goal	
Location:	Witte de Withstraat 25, Rotterdam, The Netherlands
The posed problem,	<p>With the growing challenges posed by climate change, the decision to stop suburbanization and inevitably densify big cities seems the most natural and economical¹. As a result, the population of metropolitan areas is already growing rapidly today, and cities, especially in the Netherlands, are facing serious housing shortages. If we want to improve the climate and ensure a quality life for a growing population in the future, metropolitan areas like Rotterdam will have to adapt to various challenges and appear completely different than today. This adaptation must begin by improving the available building stock. Existing unused buildings must be adapted to current and future needs. For example, 30% of the real estate owned by the Dutch police needs to be redeveloped. Among the buildings owned by the police are 20th-century buildings (including 50s-60s office buildings). These do not meet modern principles of intelligent energy use and storage, nor do they help to deal with other environmental or social issues of the future.</p> <p>Therefore, my ambition with this research is to find out what are the opportunities and limits for dealing with a non-listed potential heritage building from the 50s-60s and how to make it future-proof in the context of densification in Rotterdam.</p> <p>1 – Daniel Safarik, <i>A Country of Cities: A Manifesto for an Urban America</i>. (New York: Metropolis Books, 2014)</p>
research questions and	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>heritage component</p> <p>longevity adaptability</p> <p>How can the <u>building at Witte de Withstraat 25</u> contribute to the <u>future</u> challenges of the city centre of Rotterdam (in the context of <u>densification</u>)?</p> <p>different problems than now</p> </div> <p><i>Figure 2: Research question.</i></p> <p><i>Main research question:</i> How can the building at Witte de Withstraat 25 contribute to the future challenges of the city centre of Rotterdam (in the context of densification)?</p> <p><i>sub-questions:</i> Using the example of the former police station building in Witte de Withstraat 25, Rotterdam I am asking:</p> <ul style="list-style-type: none"> • What were the conditions under which the building was built? Was it about longevity? If not, what does it mean if one intervenes with a long-term vision in a building that was designed to be short-lived.

	<ul style="list-style-type: none"> • How can the building be adapted to different future uses? • <i>Design</i>: What defines the authenticity of this building? What are the main architectural expression elements that represent the original design of the building? How can it be used in the redesign? • What are the future challenges for the city centre of Rotterdam? • (SBT) What are the spatial characteristics of the former Police station building and its urban block in Witte de With street 25, Rotterdam?
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design assignment in which these result.	Find out what architectural and spatial elements define the <i>authenticity (related to design idea or social value)</i> of the former Police station building in Witte de Withstraat 25, Rotterdam and <i>showcase</i> them in the re-design project. Design the building for relevant and contextual new function(s) while at the same time adapting it to different <i>future uses</i> .
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Process

Method description

The methodology consists of collective - *Spatial Building Typology* (SBT) and *individual research* with the close involvement of the design medium.

SBT research is initiated by the Vacant Heritage graduation studio and it is a simultaneous process together with individual research and design process. By comparing various spatial aspects in four different scales (city, urban block, building object, detail - facades, roof) the 8 police buildings are to be examined and conclusions will be drawn. This will display the chosen case study in the context of a very wide typology of edifices.

In favour of individual research, SBT studies will define the spatial characteristics of the former Police station building in Witte de Withstraat 25, Rotterdam. The results will be compared with the individual research-based case studies for the possible reuse options.



Figure 3: left photo – newspaper office “De Rotterdammer” & “Trouw” (original design, 1958), middle photo - newspaper office “Het Vrije Volk” (1979), Police office (1993 – now).

Individual research will consist of 7 main methods - literature study, archival material study, interview with an expert practicing architect, case study of relevant projects followed by “ABCD” research method (*“Analysing buildings from context to detail in time: ABCD research method”* by H. Zijlstra, 2009), and mind mapping followed by

creation of the future scenarios for the urban block and the building - that are aiming to answer the individual sub-questions of the research.

The literature readings will lay the theoretical base on the discourse of international style heritage and its transformation, the Open Building concept and temporariness in architecture (historical research). An interview (qualitative research) will be conducted with Wessel de Jonge, the co-founder of DOCOMOMO International and a well-known practising architect running his architecture company *WDJArchitecten* with particular expertise in the field of adaptive re-use of 20th-century heritage, to find out his experience and approach towards the international style 50's-60's office buildings, temporality and longevity in 20th-century architecture and Rotterdam's context.

By visiting Stadsarchief Rotterdam and Het Nieuwe Instituut archives and reading magazines, newspaper articles and investigating the original drawings, information about the original and previous renovations', original ideas behind the design, architect's background will be gathered (historical research). Partial value assessment (based on Heritage Value Matrix, developed by N. Clarke & M. Kuipers and H. Zijlstra in the book *"Designing from Heritage: Strategies for Conservation and Conversion"*, 2016) will be done followed by the essence model which should help to define the main architectural characteristics.

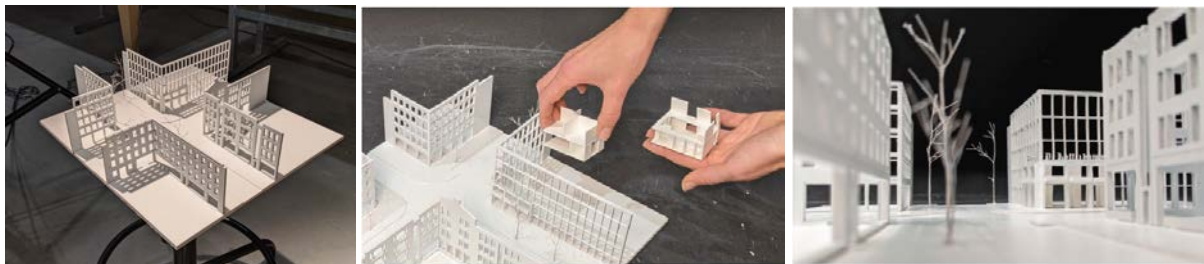


Figure 4 (3 images): The essence model showcases the openings of the crossroad facades – the surrounding buildings have more open and inviting plinths while the former police station building is only inviting at the corner. The original and existing lobby infills are compared – before it was a much more inviting and interesting double-height space.

After the first research presentation (P1), the location and context analysis of the building will be carried out together with a program workshop that will define the suitable function for adaptive-reuse.

In the meantime, design development will begin with envisioning the architectural scenario based on the research questions and creating an essence model of the Witte de Withstraat 25, Rotterdam building. Location analysis will be conducted with the help of SBT, however some additional aspects may appear to be handy to know and explore. This will be followed by the application of the "ABCD" research method and the Heritage Value Matrix to assess the building's values.

The aforementioned steps will be taken in order to identify the main architectural expression elements that represent the original design of the building.

To determine what the future challenges for Rotterdam's city centre will be, I will implement the mind mapping method to generate potential issues in future cities by using various topics as guidelines. Based on the outcome of the mind map, 3 different scenarios will be sketched (simulation research), addressing the future context of the urban block and its proximities through 3 selected topic "lenses". These urban

scenarios will determine the functions and appearance of the Witte de Withstraat 25 building. In addition to this, the rules for the hypothetical competition will be devised and proposals made as being the architect in each of the five famous architecture studios (suggested by my design mentor). Trying out different approaches by the set of rules created will help me better understand the qualities of the site and argue for its further design development.

Additionally, case study projects chosen based on the 4 topics will be studied in order to understand and use knowledge of these different spheres.

- 1) Successful **International style office transformation** (e.g., the transformed 50's building Granida in Eindhoven by studio Ton Kandelaars in 2005);
- 2) **Adaptability over time** (e.g. Open Buidling idea realized in transformation-Park Hoog Oostduin, the former "Shell" office in The Hague transformed by studio Cepezed; in new building - SOLID in Amsterdam by Tony Fretton Architects in 2011);
- 3) **Urban indoor farming** (e.g., The Green House in Utrecht by studio Cepezed, newly built in 2018);
- 4) **Tower built on top of the existing building** (e.g., De Karel Doorman by Ibelings van Til-burg Architecten, 2012).

Instead of comparing the case studies, the key design solution taken from each project studied will be used as a model example for the redesign of Witte de Withstraat 25. Besides, more projects will be studied for each topic than those given in the brackets.

The design scenarios, in combination with the new program study and the findings of historical and qualitative research, will result in an adaptive reuse design concept for the building at Witte de Withstraat 25, Rotterdam. At this point, it may be clear what adaptive reuse opportunities can this building offer.

Furthermore, the design will be elaborated by incorporating building technology research and having already completed SBT technical drawings at hand. At this moment, the reflection on the value assessment together with further improvements and details will result in the final adaptive reuse design.

The chosen methodology can be adjusted if new research directions or uncertainties emerge.

Literature and general practical preference

With regard to the research themes and aims, each of the theoretical framework parts consists of literature that is relevant in understanding the theory.

The theory I will rely on is focused on international style but not Police station buildings because the building chosen was not originally designed for the Police station (it was and served the Police as an office building) and has no distinctive police station features apart from a few glazed rooms to shortly hold detainees.

It goes without saying that due to the time limit of the study, not all information may be objective or much detailed, as this also is limited by the selection of literature.

Ideas and conditions behind the International style, functionalism:

- H.F. Mallgrave's view in a book "*Modern architectural theory: A historical survey, 1673–1968*" (2009)
- Kenneth Frampton's discourse in the book "*Modern Architecture A Critical History*" Fifth edition (2020)
- W.J.R. Curtis's view in his book "*Modern architecture since 1900*" (1996)

Adaptive reuse and preservation of the International/modern style heritage:

- Theodore H.M. Prudon's discourse in the book "*Preservation of Modern Architecture*" (2008); Written by the president of an organization committed to the documentation and preservation of modern architecture, this book outlines best practices for undertaking such efforts and addresses the latest technological advances in the field.
- S. Macdonald, K.C. Normandin and B. Kindred's discourse in the book "*Conservation of modern architecture*" (2015); This book addresses many philosophical and practical issues surrounding the conservation of modern buildings as well as raises the question of indifference and in some cases hostility towards post-war buildings.
- A. Cunningham's discourse in the book "*Modern Movement Heritage*" (1998); the preface and introduction of the book by R. Maxwell and A. Cunningham set an insightful overview of the Modern Movement, its significance and academic debate. In the second part of the book, related issues in strategies and policies are explained.
- **Post 65:** The Cultural Heritage Agency (RCE) has conducted exploratory research into heritage in the Netherlands from the period from 1965 to 1990 - the 'Post 65' period. The approach of this exploration was threefold: knowledge development and knowledge sharing, dealing with this heritage in relation to current spatial assignments and broadening support.

Authenticity (articles):

- Schmidt, Freek "Genuine architecture: On authenticity and adaptive reuse." Bulletin KNOB: Koninklijke Nederlandse Oudheidkundige Bond 119, no. 4 (2020).
- Mens, Noor. "Form and Context: On the Role of Authenticity in the Evaluation of Modern Heritage." Bulletin KNOB: Koninklijke Nederlandse Oudheidkundige Bond 119, no. 4 (2020).
- van Thoor, M. T. A. "Authenticity, a credible concept?." Bulletin KNOB: Koninklijke Nederlandse Oudheidkundige Bond 119, no. 4 (2020).

Theory and implementation of the 'Open Building' concept:

- "ZEMCH: Toward the Delivery of Zero Energy Mass Custom Homes" edited by Masa, 2016. Noguchi. - Book about the zero-energy mass custom home (ZEMCH).
- "*Open Building for Resilient Cities*" edited by Dr. Stephen Kendall, 2018.
- Leibbrandt, E. Amy & Barker, Arthur. *OPEN BUILDING FOR RESILIENT CITIES* (2018). - This document describes the achieved milestones, the goals and the challenges for Open Building and is composed by The Council on Open Building for the Open Building for Resilient Cities Conference.

Temporariness in architecture as a strategy for the building:

- van Boxel, Elma, Kristian Koreman, and ZUS Zones Urbaines Sensibles. *City of Permanent Temporality: incomplete & unfinished*. *Joelho Revista de Cultura Arquitectonica* 9, 2018. – This book describes the impressive process of 15 years of work in the urban laboratory that is Rotterdam. Authors propose a radically new way of making a city - this strategy is formed around an urban reality of values, material and people.

- *How Buildings Learn: What happens after they're built* by Stewart Brand, 1995. - The book proposes that buildings adapt best when constantly refined and reshaped by their occupants and that architects can mature from being artists of space to becoming artists of time.

Densification in the city centre:

- Safarik, Daniel. *A Country of Cities: A Manifesto for an Urban America*, 2014. In the book, which focuses on the United States, the author argues that *hyperdensity* is a solution to a lot of problems. *A Country of Cities* stands out among other books in offering a clear call for a city-based solution to the nation's most pressing challenges and in presenting a comprehensive policy agenda to meet those challenges.
- Schröpfer, Thomas. *Dense+ green: innovative building types for sustainable urban architecture*. Birkhäuser, 2015. The author explores innovations in architectural typologies that emerge from the integration of green components, such as sky terraces, green facades, and vertical parks, in high-density buildings.
- Sim, David. *Soft city: building density for everyday life*. Island Press, 2019. - The book's purpose is to use sustainable humanistic planning and architectural concepts to improve urban residents' quality of life. Covers such topics as accommodating density and diversity in the same spatial area, mobility, climate change etc.

Urban farming:

- Despommier, Dickson. *The vertical farm: feeding the world in the 21st century*. Macmillan, 2010. Despommier explains how the vertical farm will have an incredible impact on changing the face of this planet for future generations, transforming our cities into urban landscapes that will provide fresh food grown and harvested just around the corner.

The theories of Research methodology to be used in my research:

- **ABCD** (Analysing Buildings from Context to Detail in time) **research method** (2009) created by Hielkje Zijlstra assessing if a building meets the needs or can be preserved or reused;
- The **Heritage Value Matrix**, developed by N.Clarke & M.Kuipers and H. Zijlstra (2016) for classification of relevant heritage values at various scales.

Reflection

1. What is the relation between your graduation (project) topic, the studio topic (if applicable), your master track (A,U,BT,LA,MBE), and your master programme (MSc AUBS)?

The studios in the programme MSc Architecture, Urbanism and Building Sciences concentrate on contemporary issues that are relevant now and in the future. I have chosen to specialize in the architecture track because I find that my personal interests and characteristics are well-suited for it. According to Pritzker award winner Thom Mayne, architecture is a way of seeing, thinking, and questioning, confirming my belief that it is a compound of aesthetics, psychology, and technicalities. I am keen on the conceptual level where those features come together and result in a functional object of a building – be it in transformation or newly built. It was not hard to decide which track of the master's degree to choose because I like that in the scale of one building or a complex aesthetic part can be thoroughly explored. This scale has a closer bond to people's everyday lives. The components and layout of the building, as well as facades that become part of the region's identity, make a building an interesting field of work.

Moreover, I want to create innovative and sustainable design solutions that are beneficial not only for human users but also for the environment. With the AIA (American Institute of Architects) president's (2018) Carl Elefante's slogan "The greenest building is... one that is already built," I chose the Vacant Heritage studio for my graduation year to explore the reuse of existing building stock as a

means to catalyse positive change in the uncertain and complex challenges of the future.

The office space (like in the police stations) is constantly being reconsidered or abandoned, especially after the pandemic that changed the nature of our work environment. New ideas need to unleash the potential of vacant offices, and I am keen to find out what the outcome of the graduation project will bring.

2. What is the relevance of your graduation work in the larger social, professional and scientific framework?

Firstly, the collective SBT research will result in the second Volume of SBT book series (first one - *Spatial Building Typology: Vacant Heritage: Department Stores | V&D's*, Zijlstra, H., 2021)

Secondly, the individual study is important because it may reveal the innovative design approach and opportunities for the unlisted 50's-60's international style office buildings - "glass boxes"- whose potential is not yet widely seen today, especially in the context of densification.

It differs from previous research in that it examines young potential heritage that will not necessarily be included in the monuments' lists and searches for the authenticity of the building even if it hasn't been yet stated by the experts of the field. Because similar "glass boxes" are built all around the world, the outcome of the research could later be used as a model design project for architectural practice in the context of current environmental and renovation goals.

Moreover, for the investigation how to 'activate' other types of international style buildings, this study could also be taken as a base and further developed regarding different typologies of International-style buildings as this research concerns specifically the former office building.

Image sources:

Figure 1: The cover collage was made by the author.

The following sources are of the photographs used in the collage.

<https://www.ad.nl/economie/leegstand-kantoren-daalt-maar-blijft-structureel-hoog~afa57f74/>

<https://www.ad.nl/rotterdam/leegstand-kantoren-rotterdam-hoger-dan-in-andere-grote-steden~a79ca0df/>

<https://www.urbanos.nl/portfolio-items/transformatie-leegstaand-kantoor-naar-onderwijs/>

<https://www.urbanos.nl/portfolio-items/transformatie-leegstaand-kantoor-naar-onderwijs/>

<https://www.iamexpat.nl/housing/real-estate-news/antikraak-cheap-rent-exchange-being-live-guardian>

<http://www.vastgoedvergelijker.nl/nieuws/dynamis-positieve-flow-nederlandse-economie-zorgt-nog-niet-voor-extra-vraag-vierkante-meters-kantoor>

<https://indebuurt.nl/utrecht/nieuws/er-komen-woningen-in-dit-kantoorgebouw-aan-de-st-jacobsstraat-in-utrecht~64408/>

<https://en.squat.net/tag/squat-ban/>

Figure 2: self-made diagram.

Figure 3:

Left - "Bouw" magazine, 1959. Photo taken from Het Nieuwe Instituut archives.

Middle -

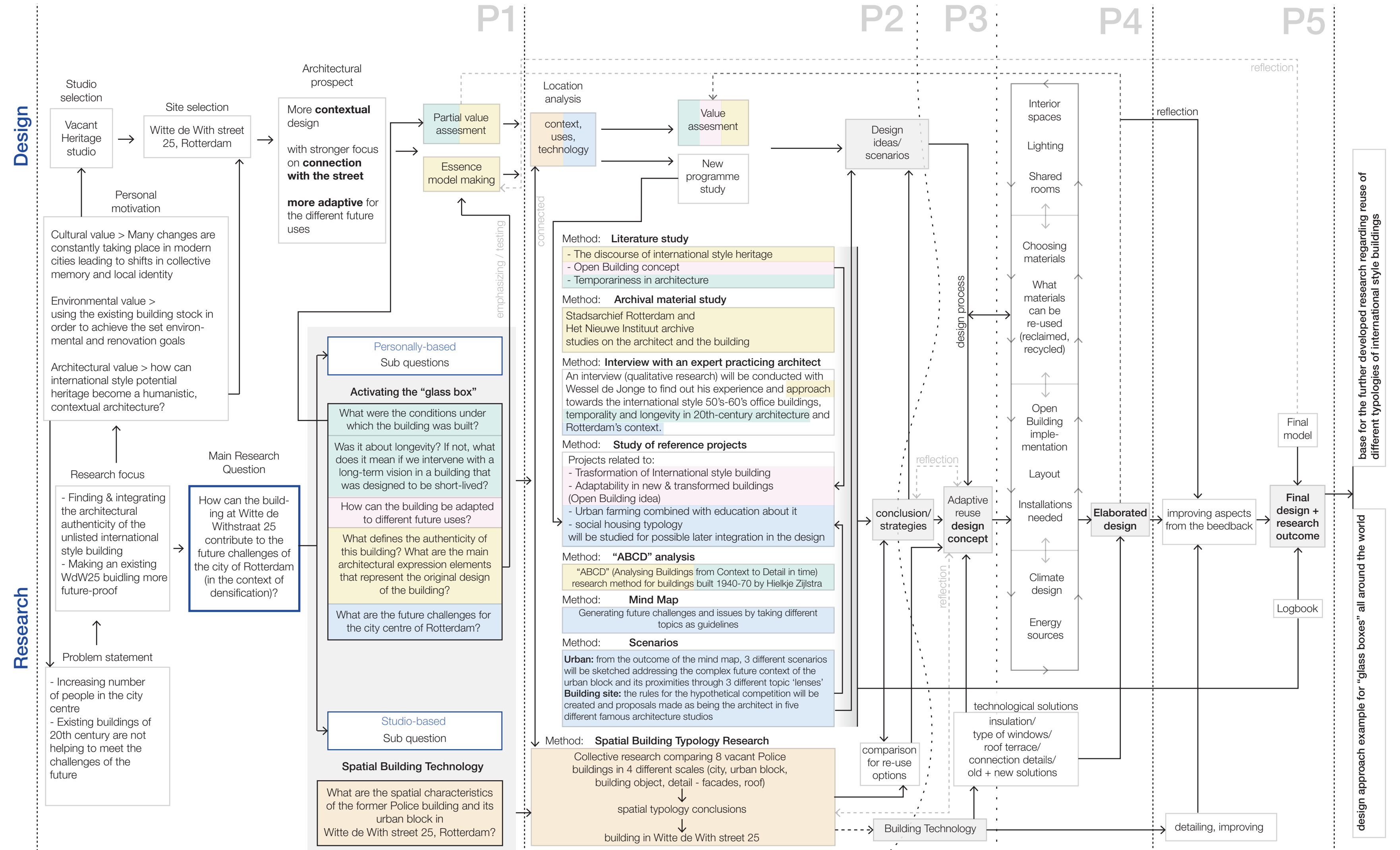
https://upload.wikimedia.org/wikipedia/commons/5/56/Gebouw_van_het_Vrije_Volk_in_Rotterdam%2C_Bestanddeelnr_934-1777.jpg

Right - <https://d1d5g9qzvtwux0.cloudfront.net/app/uploads/2019/08/Witte-de-Withstraat-25-Rotterdam-e1565100577605-1000x667.jpg>

Figure 4: own photos

Figure 5 (next page): self-made *Research Plan structure* diagram.

Research Plan structure



base for the further developed research regarding reuse of different typologies of international style buildings

design approach example for "glass boxes" all around the world