

Graduation Plan

Master of Science Architecture, Urbanism & Building Sciences

Heritage & Architecture – Graduation studio Vacant
Heritage Police Real Estates

Student: Mathyn Klein (4737601)

Date: January 10, 2022

Date of P2: January 18, 2022



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	Mathyn Carsten Klein
Student number	4737601

Studio		
Name / Theme	Heritage & Architecture – Studio Vacant Heritage Police Real Estates	
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	<p>The reuse of vacant buildings is in my point of view one of the best solutions in the demand for new dwelling and cultural buildings like museums. I am very motivated to work with vacant monumental buildings because I really like heritage. From my very first study year on the university of applied sciences in Amsterdam I focused on heritage preservation and restoration. So, in that perspective is the TU Delft Heritage graduation studio my best choice. And also, because of my ambition after my graduation. I would like to work by a consultancy firm, like a 'gemeentelijke monumentenzorg' or the Dutch Cultural Heritage Agency (RCE) as an advisor/specialist. Moreover, I have a personal fascination for 18th and 19th century architecture, so in that perspective is Huis 't Velde a good choice.</p>	

Graduation project	
Title of the graduation project	Sustainable estate of the future research and design into a sustainable reuse of Dutch ' <i>buitenplaats</i> ' Huis 't Velde.
Goal	
Location:	Landgoed Huis 't Velde. Rijksstraatweg 127, 7231AD Warnsveld, The Netherlands
The posed problem,	There are more than 800 estates in The Netherlands. All are facing the same problem in the coming decades. They have a high risk of getting divested and vacant. Two important reasons for that problem are the lack of comfort and high maintenance costs. The reuse and redesign of estates must focus on an integral reuse and

	sustainable adaptation. See problem statement for more information.
research questions and design assignment in which these result.	See individual research The design proposal can be seen as a test object for the research conclusions. The redesign of Huis 't Velde will focus on a sustainable reuse and will set an example for other estates. See research by designing.

The Heritage & Architecture studio does research into a group of buildings from the Dutch Police. The department Atelier Politie Bouwmeester is doing research in collaboration with the TU Delft Heritage department for the reuse opportunities of possibly vacant police real estate because the Dutch Police have to divest approximately 700,000 square meters in the coming years. One of the buildings is an estate (Dutch: buitenplaats). Buitenplaats Huis 't Velde is situated in Warnsveld near Zutphen. This estate is chosen for the personal design assignment. Besides the individual part does the studio research into the spatial building typology of eight Police buildings (called SBT-research). This year's research is the second part of a long-term research line.



Figure 1: the main building from the 17th – 18th century



Problem statement

According to Strootman Landschapsarchitecten (2013) there is a big problem in the province of Gelderland. This firm researched the current situations and problems in the area regarding the preservation of estates (landgoederen & buitenplaatsen). The biggest problems are that the owners of the estates do not earn enough money to maintain the estate(s) and that many buildings lack in comfort regarding the indoor climate and building technology.

According to the Dutch Cultural Heritage Agency (RCE) this problem is representative for the rest of The Netherlands¹. Heidi van Limburg Stirum wrote in her preface in the book *“nieuwe functies voor kastelen en buitenplaatsen”* (2016), that there is still a lack in information about the necessary architectural and technological interventions needed to adapt these buildings to the contemporary needs and demands of the 21st century². While there are more than 800 of these buildings in The Netherlands that have to be updated to the 21st century which of more 300 are still in residential use.

Studio research

The graduation project consists of three parts: group research (Spatial Building Typology), individual research and individual design. All three are related to each other and influence the final results. Moreover, all subjects run parallel during the whole graduation year (see research diagram).

As stated before the Atelier Politie Bouwmeester is doing research in their possible future vacant buildings. According to the introduction lecture at the start of the graduation studio, they feel responsible for all their real estates. Even the ones who are getting divested. They stated to set an exemplary of how the divested real estate can be reused because of their national, social, and cultural responsibilities. The studio Vacant Heritage is helping them with research into the history, values, and potentials of a group of selected buildings.

The group research is about spatial typology. This research line from the graduation studio is called: *spatial building typology* (SBT). Here is spatial connection the central topic of the research with the main question: *‘how and why do a series of spatial aspects on the scale levels Inner city, Urban block, Building object and Roof & Façade, influence the design possibilities regarding the redesign of Dutch police real estates?’*³. Research of spatial characteristics, similarities and differences of all buildings will be done by groupwork in the group of students in the studio with redrawing the buildings according to the Haussmann method⁴. One of the eight selected buildings is Huis ‘t Velde. After this, the results can be used in the design research and process and the research and design results will also be used in the last chapter of the SBT research booklet. See last year’s outcome SBT part 1 from Zijlstra, et al. (2021) for an example.

Individual research

My personal research is about a sustainable reuse of a ‘buitenplaats’. This integrates the whole estate and not only the main building because of the cultural significance of the ensemble⁵.

¹ According to a series of seminars with the overall title ‘Kastelen en Buitenplaatsen’ from the Rijksdienst voor het Cultureel Erfgoed (RCE) is the decay and vacancy of estates a problem in the whole country.

² See van Limburg Stirum, p. 5 in Vogelzang (2016).

³ This research question is extracted from the course manual. The general question is adapted to this year research topic (Heritage & Architecture BK TU Delft, 2021, p. 10).

⁴ This method is explained in Jallon & Napolitano (2017).

⁵ According to Strootman Landschapsarchitecten, Gerdy Verschuure-Stuip and Henri van Wijck is the ensemble of nature and buildings the biggest value of a buitenplaats.

In the last decade of heritage design were design approaches an important topic. Jo Coenen, former professor of R-MIT TU Delft, distinguished five design attitudes about dealing with the redesign of a heritage building. These are *continuity, polarity, dialogue, congruence and blending*⁶. Charles Bloszies distinguished six years later in 2012 three approaches: *extreme, restrained, and referential*⁷.

How can these theories be translated to the main topic in 2021? Heritage design is not only about adding new architecture, but moreover about sustainable reuse and redesign. Are the design attitudes still seasonable in the important topics of sustainability? What impact has sustainability on the monumental building. Can it be done in a restrained way, or asks sustainable features for more extreme changes?

The research question is: *'which design approach is the best suited to apply for a contemporary reuse and redesign of a Dutch estate where both building, and nature contribute to a sustainable design and in particular for Huis 't Velde in Warnsveld?'*.

Sub questions are:

1. What are the design approaches from Bloszies and how are they used in a redesign?
2. What are the design approaches from Coenen and how are they used in a redesign?
3. What are the characteristics of a Dutch estate (buitenplaats)?
4. How did former residential owners make use of the estate's garden(s) and building(s)?
5. Which sustainable topics according to the UNESCO SDG's are relevant for the redesign of a Dutch estate?
6. How is sustainability elaborated in the case studies?
7. Which parts of Huis 't Velde are relevant for a sustainable reuse and redesign of the estate?
8. What kind of sustainable solutions are applicable for Huis 't Velde?

The case study analysis forms the biggest part of the individual research. The cases are selected on a few criteria. The buildings are selected with the characteristics that it is a Dutch 'rijksmonument'⁸, the case have to be a 'buitenplaats' or castle, must be already reused with a different user function and must contain sustainable interventions. The cases are:

1. Landgoed kasteel Twickel
2. Landgoed Singraven
3. Buitenplaats kasteel Wijlre
4. Kasteel Ruurlo

Research by designing

In the design process can the conclusions of the research be tested. The expectation is that a lot of different sustainable solutions will be found. During the design can these solutions be tested to see what is applicable for an estate and what the impact is. Finally, will the redesign proposal set an example of an integral sustainable redesign and reuse of a Dutch estate.

⁶ See Coenen (2006), p. 50.

⁷ See Bloszies (2012), p. 8.

⁸ A 'rijksmonument' is a Dutch term for national listed monument under the protection of the national legislation for the preservation of monuments.

Test case

Huis 't Velde is an estate of appr. 79 hectares, the inner island is appr. 26,000 square meters. The two buildings (main house and carriage house) have a footprint of 950 square meters with a gross floor area of 2,239 and 1,427 square meters. Now it is a Police academy and the carriage building is a hotel. The aim is to fit in a museum and to investigate how the building and garden(s) as an ensemble can contribute to a sustainable use.

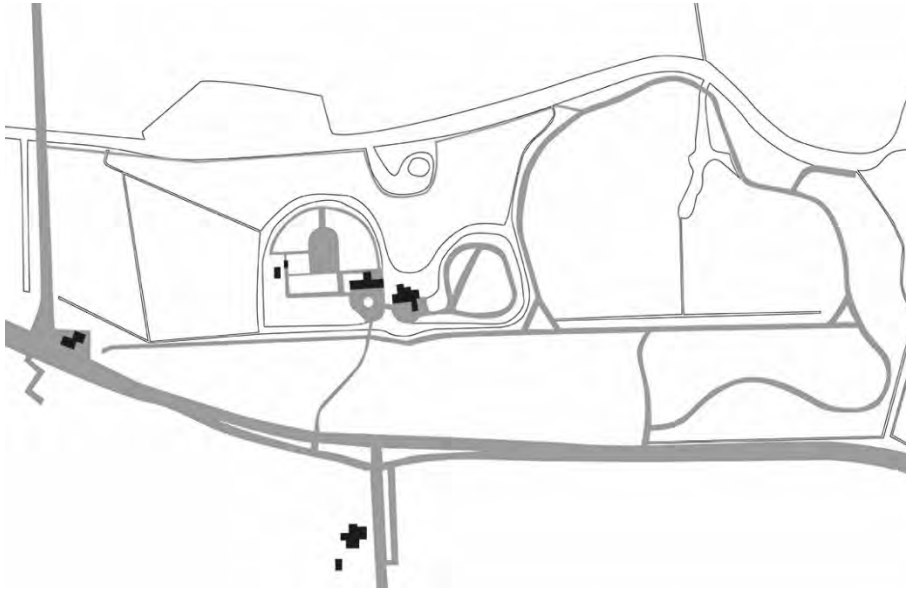


Figure 4: drawing of the current layout of the estate.



Figure 5: essence model of the estate. Dotted line marks the edges of the estate.

Process

Method description

The research and design methodology consists of more parts. Almost half of it is group work and the rest is individual work. The group researches form an important input for the individual research and design.

SBT-research

The methodology for the SBT research is determined by the tutors of the Heritage & Architecture graduation studio and can be checked in the course manual⁹. This research consists mostly of archival research and redrawing. The drawings will give information about

⁹ See studio text (Heritage & Architecture BK TU Delft, 2021).

the spatial characteristics in four scale levels: *inner city, urban block, building object and building envelope*. Moreover, is the coherence between SBT and the design process important. The outcome of the SBT research is a series of maps, drawings, photographs and conclusions about Huis 't Velde and other Police real estates. This will be published in a second SBT publication: *SBT part 2 Police Real Estate*¹⁰. The results are an important input for the design. They give information about the building and help to understand the building and its characteristics.

Huis 't Velde group research

A small group research consists the architectural analysis and value assessment of Huis 't Velde. The aim of this analyses is to research the history of the building and characteristics like materiality and building technology. This information is necessary to understand the building and gives input for a value assessment. The analysis and value assessment will be done in a group of three students (all redesigning Huis 't Velde) to make a considered conclusion as objective as possible and will be done during the second and third quarter of the graduation year. The analyses and value assessment are important for the design because it clarifies possibilities and limitations of the heritage building and terrain. It will also contribute to the concept of reuse.

Individual research

For the individual research there is a more conventional desk research necessary. The biggest part of the research will be done through literature research. Sources about the value, relevance, and reuse of 'buitenplaatsen' and sustainability are the most important. Besides that, an analysis of case studies will complement the research and set examples. Information about the cases is consulted in local archives, books, visitations, and interviews. Interview appointments with architectural and building technology firms and estate owners that are related to the case studies takes place during the first half of the MSc 4 semester. The aim of the case study analysis is to gather information about how estates are reused and how the garden(s) is/are used for an integral sustainable redesign.

Design process

The start of the design process will be between the P1 and P2 presentations. For the P2 presentations are a few topics that have to be addressed: potentials on the estate, new user functions, possible additional building(s), place of new design, global layout, and forms of the redesign. The SBT-research and architectural analysis will help in this process.

After the P2 will start the elaboration of the design. On the first hand the elaboration of a museum as the new user function and on the other hand the implementation of the research results. The design will function as a test case for the research conclusions and the outcome of the design tests will give feedback on the research outcome. Finally, this results in a final research conclusion and a relevant and realistic design proposal.

¹⁰ In collaboration with Hielke Zijlstra (research mentor). See last year's SBT part 1 publication for an example.

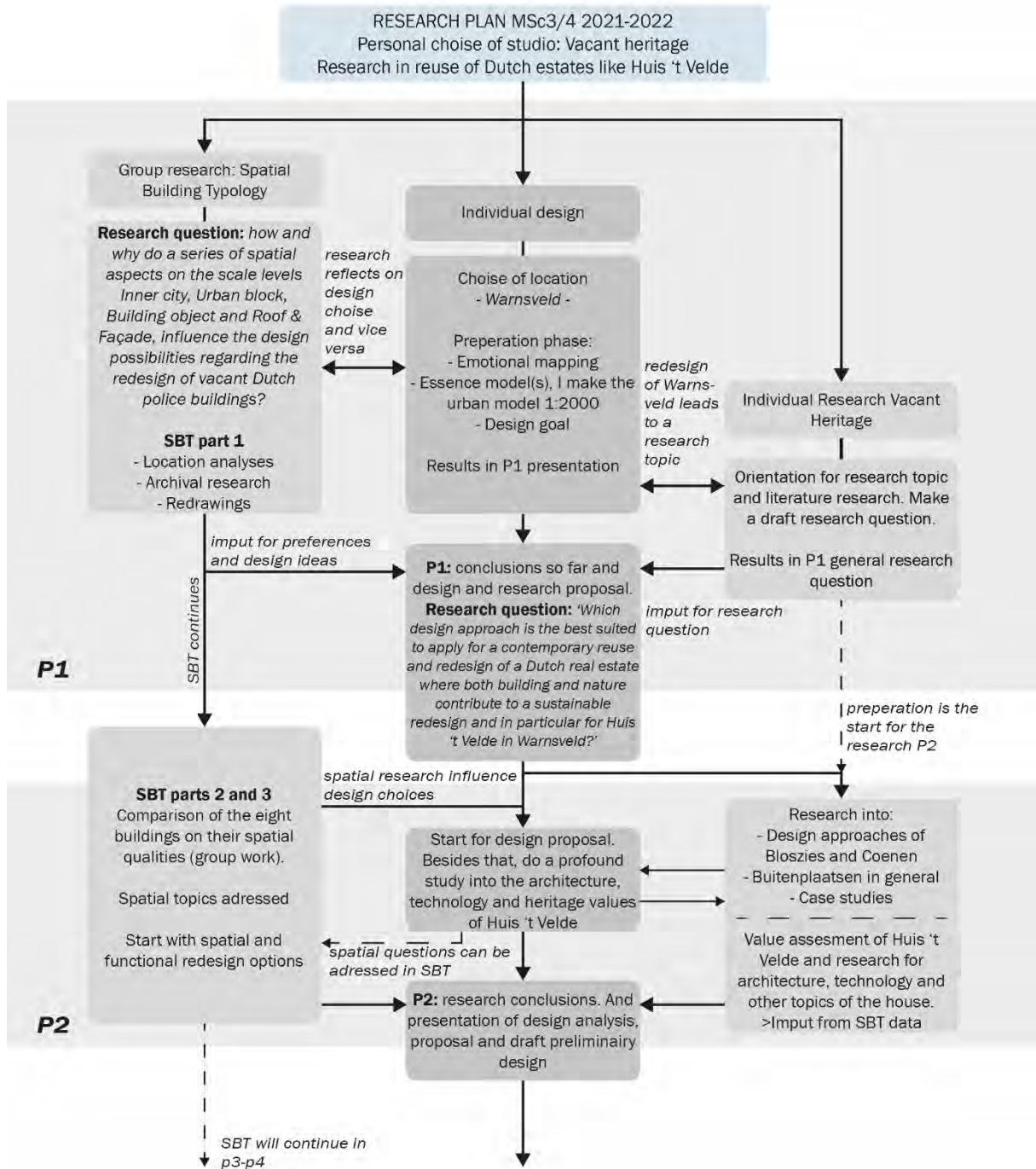


Figure 6: research diagram part 1/2 as part of the quarter 1 MSc3 Research Plan course.

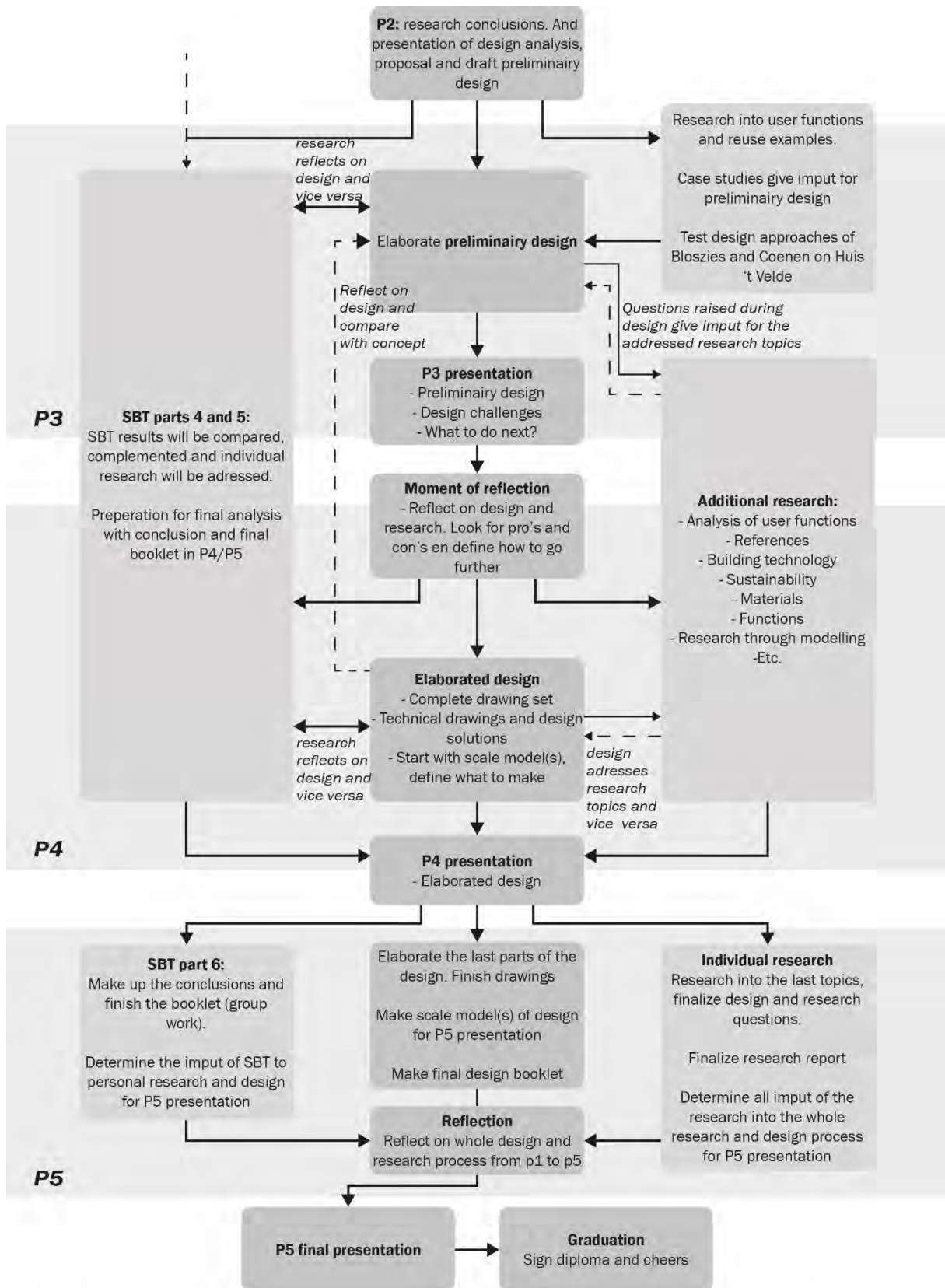


Figure 7: research diagram part 2/2 as part of the quarter 1 MSc3 Research Plan course.

Literature and general practical preference

General references

First, I will study the design approaches of Coenen and Bloszies to learn more about dealing with heritage redesign and to gather the knowledge to translate these approaches to a sustainability approach. During that work will literature and other kinds of sources (drawings etc.) about the redesign of estates help to achieve the first research results.

To order the results in the research in categories will the Global Sustainable Development Goals help. I intent to pick three SDG's as main topics for the research and design that are the most relevant for an estate. Conclusions and design experiments can be ordered in one of these topics.

For the groupwork architectural analysis and value assessment will literature be used as a basis. The book of Kuipers and De Jonge (2017) and the reader '*MSc Heritage & Analysis ANALYSE*' from the Heritage Studio will provide the topics and framework for the analysis and value assessment.

Literature list:

Ankersmit, B., Schellen, H., Neuhaus, E. & Martens, M. (2008). *In monumenten met een museale functie: het verantwoorde binnenklimaat*. Eindhoven University of Technology.

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Ankersmit, B. & Stappers, M.H.L. (2017). *Managing indoor climate risks in museums*. Springer International Publishing Switzerland.

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Coenen, J. (2006). *The art of blending*. Delft: VSSD.

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Haverkate, J., den Ouden, L., Brunt, A., & Bloemendal, R. (2021). *Atlas van Twickel*. Zwolle: WBooks.

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Jallon, B., & Napolitano, U. (2017). *Paris Haussmann*. Paris: Park Books.

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Storms-Smeets, E. (2021). Regionale samenwerkingsverbanden bij landgoederen (online presentation). Gelders Genootschap.

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Vereniging Particuliere Historische Buitenplaatsen. (2018). *Publicaties*. Retrieved from Vereniging Particuliere Historische Buitenplaatsen: <https://www.vphb.nl/wordpress/publicaties/>

Verschuure-Stuip, G. (2019). *Welgelegen, Analyse van de Hollandse Buitenplaatsen in hun landschappen (1630-1730)*. Delft University of Technology, A+BE | Architecture and the Built Environment, Delft. Retrieved from <https://doi.org/10.7480/abe.2019.6>

Vogelzang, F. (2016). *Nieuwe functies voor kastelen en buitenplaatsen*. Kenniscentrum voor Kasteel en Buitenplaats.

Wijck, H. v. (1974). *De Nederlandse Buitenplaats*. Dissertation, Delft University of Technology.

Zijlstra, H., Versluijs, V., Jansen, I., Apti, A. A., van den Hoogen, C., Kim, M., . . . Meijers, L. (2021). *Spatial Building Typology - Vacant Heritage: Department Stores / V&D's*. Delft: BK-Books.

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 studio focusses on the redesign of heritage buildings. Moreover, they focus on current topics. Sustainability is one of them because of the mondial climate goals. It is difficult to make a heritage building more sustainable, but a big estate gives new opportunities because of the surrounding gardens. This is the reason to research these unique possibilities. It can give new insights in the redesign of estates. Moreover, I focus my whole study career on the preservation of heritage. My graduation topic fits the best in my interests and my interests and ambition fits the best in the Heritage & Architecture graduation studio.

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

The estate Huis 't Velde is a 'buitenplaats', a Dutch word for a typology of estates from mostly former noble families or rich families. These estates were part of the way of how these influential families displayed their social-cultural position and of course were the place where they lived. In the Netherlands are a lot of estates, it is a big part of our cultural heritage. Luckily more than 800 estates are preserved, but that is only 20% of the total amount of *buitenplaatsen*, the rest is demolished during the centuries¹¹.

For the preservation of the tangible heritage it is important to preserve and maintain these kinds of buildings. According to Fred Vogelzang (2016) was in 2016 more than 300 castles and buitenplaatsen still in private residential use, but more are getting divested because the costs for maintenance are too high or noble families extinct. My graduation project has a relevance to that topic.

How can we deal with these divested estates and how can we make them sustainable and economical relevant for the demands and needs of the 21st century? According to Strootman Landschapsarchitecten (2013) this is a big problem in the province of Gelderland. Their conclusion is that many estates in the area are in danger for decay and loss of ensemble value(s). Segmented sales threaten the estates while it is very important to keep the

¹¹ According to Vogelenzang, 2021.

ensembles complete. This is important because it is necessary to keep the buildings and the gardens as an ensemble for future research and of course for the full experience of this heritage¹². At the same time lacks these buildings in comfort and they have a high energy consumption. My graduation project refers to both the ensemble and energy problems with a research and design for a sustainable reuse of a whole estate.

In the scientific framework my graduation project contributes to the research of what is started by Henri van Wyck and later Gerdy Verschuure-Stuip. They started to research into the relevance and cultural value of castles and buitenplaatsen and still continue doing that. In the last years are foundation *Gelders Landschap & Kastelen* and the *Kenniscentrum voor Kasteel en Buitenplaats* doing research into how we can preserve and reuse this kind of estates. My graduation project contributes on both researches. On one side to the notion of values and especially 'the why' we have to deal with the preservation and continuation of Dutch estates. On the other side it contributes as a case study example for 'the how' a modern reuse design with contemporary sustainability topics can look like.

Finally, my graduation project contributes to the Spatial Building typology research line from the Vacant Heritage graduation studio. As Huis 't Velde is one of the buildings being researched in the SBT research, my individual research and design gathers more information about this specific building. The individual research and design conclusions will also be part of the second SBT research publication in 2022: *SBT volume 2 Dutch Police real estates*.

¹² See Vogelenzang (2021), pp. 9-25.