Research Plan
AR3AH105 Graduation Studio
Adapting 20th Century Heritage

SBT
Spatial Building Typology of former V&D Department Stores

3R in Heritage Building

5R in Department Stores

Astitira Aphi
4862066
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1. Introduction
Illustration 1.
Beautiful Stained Glass Window
Blocked with Plastic Goods at Action Store in former V&D, Leiden
INTRODUCTION

On the 20th century in Netherlands, there were buildings specifically designed and built to host the V&D department stores whether in large or small cities. The V&D went bankrupt in 2015, leaving these relatively huge buildings without its main function and sole reason it was built. Currently the buildings are at different states some are demolished, vacant, or in a cycle of short-lived functions. Most of these buildings were built with a sense of grandness and are placed in the city centre. Therefore, some of the buildings are heritage buildings and they are ready for a new function that enhances its value. To spatially understand these buildings, the research begins with studying Spatial Building Typology (SBT) of the department stores buildings in different scales. The research results in profound spatial knowledge of the department stores will be used as the base for further study of the redesign approach.

The building chosen for this research is the former V&D in Leiden, located right in the city centre surrounded by a beautiful and vibrant city life with many historical buildings forming the city view. The building itself is currently going through an identity crisis from being a V&D store, a Hudson’s Bay, and now an Action store. A heritage building is considered highly valuable to be kept and remained as it were. However, does this unsustainable cycle of function enhances its value?

The retail industry are a continuous cycle of production and consumption that adapts to the current society, economy, technology, and environmental demands (Strahle, 2017). The department stores, from its rise in the early 19th century till now has always faced challenges to survive in the society and its everchanging demands. Although the obstacles are constant and at times the department stores are struggling economically, they always try to change their system to adapt to the new demands with the focus of drawing new customers. The society and economy
will always change rapidly, but the need for us to be more environmentally conscious has always been there and now it is a demand that a company cannot deny.

Reducing retailer’s energy use and carbon footprint can be the future sustainable goal for the project. However, is reducing the carbon footprint a goal that is too broad and technical for this issue of obsolete buildings? What about the programme of the building in relation with the user’s values and culture of the city, the building, and the interior itself? Therefore, it raises the question, what is the sustainable strategy between department stores and heritage architecture that creates coherence existence of both? What kind of sustainable strategy can be used?

In Petzet and Heilmeyer’s (2011) book of case studies and interviews titled Reduce, Reuse, Recycle (3R), they discuss the sustainable value and approaches of developing the existing buildings and urban tissue. Heritage buildings are one of the points of discussion.

In explaining sustainable strategies for companies to use for their gain, Esty and Winston (2006) developed the 3R and added two untraditional points turning 3R into 5R (Reduce, Reuse, Recycle, Re-imagine, Redesign). The use of the waste management system that focus with what is already there were adapted to their fields of industry and the adaptation is a continuous one. Moreover, in the fashion industry, one of the industries taking part in department stores, the 5R are also applied in many ways. The abbreviation of 5R in the fashion industry are sometimes interpreted into differently such as Retouch, Repeat, Repair, Repurpose, Reinvent. Analyzing and developing both systematically and spatially the similarity between the 3R in heritage architecture and the 5R in department stores using the results of the SBT analysis will be the focus of this research.
### General Research Structure Scheme

This scheme is a scheme of the general research structure. An elaborated part with the initial content of the research are in *Research-Redesign Scheme* as part of the research plan conclusion.

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**Methods**
- Location Analysis
- Literature Research
- Model Making
- Redrawing Buildings Sketches
- 3D Visualization
- Case Study
- Technical Drawings
Focus: Sustainable strategy between department stores and heritage building.
PROBLEM STATEMENT

Unsustainable Cycle of Retail Decreasing Heritage’s Building Value

Retail are the most short-term type of buildings (Kärholm, 2012, p. 2). The former V&D in Leiden itself has changed its function several times, currently only the ground floor is accessible for the public. This is an unsustainable condition for the industry, environment, and the buildings themselves both environmentally and economically. It contradicts the retail’s industry including department stores demand of being more environmentally responsible. Beside the unsustainable cycle, the value of the heritage building is decreasing and evident spatially such as the beautiful stained-glass window blocked by plastic trash cans. This phenomenon is described by Schmidt III and Austin (2016, p. 99), as change in the society can cause discrepancy between the use of the building and the capability of the building. Based on the SBT research of the Leiden V&D, the building holds so much more potential to adapt to new functions than these unsustainable temporal retails.

The department stores itself has faced many trials to survive other than the occurring rise of e-commerce. Previously according to Howard (2015, p. 89), the department stores in America for example, has to overcome the great depression that lead to woman losing their capability to purchase, the tendency of people to shop out of the city centre because of cars, and the constant demand to be modern. The department stores itself are always willing to go beyond their economic capability to adapt to the new demands in the hope for drawing new customers and future gain. Therefore, it might be time for department store to be Reimagined again to adapt to sociocultural demands and the need to be environmentally conscious.

In building’s adaptability to be designed, there are elements of space involved in the process such as loose fit plan and open plan (Schmidt III and Austin, 2016, p54). According to the initial results of the SBT research, the plans of the former V&D department store in Leiden are a combination of both. The building is composed by one floor after another with only columns defining dimensions and shape of the space with a clear distinction between structural and non-structural elements. This type of plan gives many possibilities for design, from one perspective it can be seen as unsustainable as it enables quick change of function by giving flexibility for new retail to occupy the building in a short amount of time to build, operate, and demolish. On the other hand, it also makes the building highly adaptable as it has many possibilities for reuse with various type of functions especially department stores as it were built specifically for it. This research focus on the latter as it opens the prospect in adapting to sustainable approach that elevates and cohere with the heritage building’s value. The building will remain standing in the centre of Leiden with stories of its past but waiting for a future function and redesign, what kind? Should it be another short-lived retail? Or is it time for a more sustainable occupancy that values its heritage status?
RESEARCH PURPOSE
Sustainable Strategy of Redesign That Enhances Value

Analysis on the spatial typology of the department stores provides an everlasting spatial knowledge for the sustainable redesign. Unlike the temporary aspect of retail, according to Madrazo’s (1995, p. 227), the main difference between type and style is time, because type does not know temporal barrier and does not have a historical time frame. Therefore, the indefinite spatial aspects of type give a stance to retail’s temporality. The SBT research as the base gives the spatial analysis needed for a design approach. However, it does not resolve the unsustainable cycle of the retail industry. Therefore, the purpose of this research is to analyse the spatial building typology of the former V&D department store building and study a possible sustainable approach both in the heritage architecture and reimagined department store is needed for the industry, the building, the society, and the environment.

Illustration 3.
Problem Statement
Discrepancy between function and a Building’s Capability to Adapt

Illustration 4.
Research Purpose
A Sustainable Strategy between Heritage Building and Future Function
The former V&D building in Leiden is valuable physically as part of the city centre and also to the society. Currently, the values of the building are in need of a redesign approach to create a well-functioning building instead on the cycle of temporary functions that did not use the building entirely. As explained before, the building's plan welcomes possibilities to adapt for change and reuse. Instead of another mismatch between the building's capability to adapt and the function of the building, the approach of redesign needs to consider both the heritage building itself using the SBT research alongside sustainable approach and the new function as a unity that works together to enhance each other's value. The redesign approach considered suitable for this situation are the 3R (Reduce, Reuse, Recycle) strategy for heritage buildings by Petzet and Heilmeyer (2011), and the 5R (Reduce, Reuse, Recycle, Reimagine, and Redesign) strategy used for sustainable retail by Esty and Winston (2006).

At first, Petzet and Heilmeyer (2011, p. 49) wrote that their idea of applying the waste management strategy to architecture revolves around energy use. However, in their written interviews with architects of the projects, they explains more than the energy use of each project but rather the idea, method, and approach of design in our built environment. To leave more room for interpretation, they breaks down each strategy into keywords that are more familiar to the architectural world to best define each case study.

In Reduce, Reuse, Recycle the design approaches to heritage buildings considers the history, the urban scale, the tools, the society, and the future use it has. It considers the limitations and possibilities in using existing structures that considers sustainability aspects in design. By explaining each keyword with a case study and interview, Petzet and Heilmeyer (2011) gives an insight of the reality architects are facing in different contexts. Which gives real examples of analysis and research to respond to the vacant heritage such as the former V&D department stores that has been through change of functions, use, and design repeatedly. What works? What is it the city, society, and the heritage building need for it to stay as a valuable part for them?

As for department stores, the focus has always been to draw customers as many as possible and to keep them inside the building within a long-time frame (Kärholm, 2012). In order to do this, department stores often go beyond its financial limits to adapt to current trends and needs in the hope for future gains (Howard, 2015, p 95). One of the trends in the society and also a necessity of these department stores is the demand to be environmentally sustainable.
Therefore, the 5R (Reduce, Reuse, Recycle, Reimagined, Redesign) approach by Esty and Winston (2006) is one of the possible strategies to rethink department stores concept. The reason of using this strategy is because of its relevance or similarity with the 3R strategy in heritage building.

For the term ‘Reimagined’ for example, the department stores are not a stand-alone idea in the city. As described by Kärrholm (2012, p. 68-81), retail need to have a relation with cultural aspects to sustain in the city. It often connects with public events and interest to draw people in. It changes its themes, programmes, and functions in order to remain relevant to current trends. It also often connects with surrounding retail to create an experience of the city, making shopping a sequential experience rather than an isolated one.

The strategies of 3R and 5R will be adapted and applied with the spatial configurations focusing on the open floor plans from the Spatial Building Typology research. Therefore, the research questions whether there are ways of rethinking these configurations using a specific strategy in a sustainable way, both for the new retail function and the heritage buildings itself considering the scale of the interior to the scale of the city. Because the retail experience is a continuous one, from the moment being in the retail all the way until our home (Kärrholm, 2012, p.4). This research will unravel both 3R and 5R strategies and find spatial and systematic correlation between department stores and heritage building and how the two can work together in each scale to create a synergic sustainable approach.
Research Statement Scheme

A high valued heritage building on a cycle of unsustainable short term department stores.

Problem

Possible Solution

Spatial Knowledge

SBT
of vacant Department Stores

Sustainable Strategy

3R
in Heritage Architecture

Reduce
Perception
Maintenance
Behaviour

Reuse
Renovation
Conversion
Infill
Redesign
Subtraction
Addition

Reuse
Material Recycling
Gestalt Recycling

5R
in Department Stores

Reduce
Reduce

Reuse
Reuse

Recycle
Repair

Reimagine
Repurpose

Redesign
Repeat

Reinvent
Department Store / Retail

Focus of research in Retail according to Howard (2015)
- Departmentalized for economic purposes
- Easy distribution to map profit and loss
- Effective for the merchant to expand
- To track employees

Sociocultural synchronisation
- Retailing: collaboration with other retail coordination with other events
- Flows & Movements: relations with public space and movements of the city
- Cultural Events & Special Occasions: Seasons and cultures
- Activities: Retail and Non-Retail (museums, etc)
- Bodily Rhythms: Customer to use up their time in store
### Theoretical Framework

<table>
<thead>
<tr>
<th>Theoretical Reference</th>
<th>Defining Role in Research</th>
<th>Focus based On Theory</th>
<th>Reflection on Theory</th>
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<tbody>
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<td>Method of Analysis</td>
<td>Character of Type</td>
<td>Scale levels of Spatial Building Typology</td>
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<td></td>
<td></td>
<td>Spatial Configurations</td>
<td>Permanence of Building’s Typology</td>
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<tr>
<td>Jallon (2017)</td>
<td>Haussman Method</td>
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<td>Loose-Fit Plan and Open Plan</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Lacks specific analysis and values of site and building</td>
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<tr>
<td>Sustainable Strategy</td>
<td>Programme Analysis</td>
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<tr>
<td>Sustainable strategy</td>
<td>Sustainable strategy</td>
<td>Base for Redesign Programme</td>
<td>Base for Redesign Programme</td>
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<tr>
<td>Strategy for Research and Redesign in Heritage Building</td>
<td>Strategy for Research and Redesign in Retail (Dept. Stores)</td>
<td>Socio-Cultural Synchronization of Retail</td>
<td>The Evolution and Survival of Retail</td>
</tr>
</tbody>
</table>

Gives motivation and connection between Research and Redesign as a Strategy.

Lacks connection with sociocultural aspects. Supports user and surrounding analysis for the strategy.
RESEARCH QUESTION

What is the sustainable redesign possibility between heritage buildings and department stores by using the strategy of 3R (Reduce, Reuse, Recycle) in heritage buildings and 5R (Reduce, Reuse, Recycle, Reimagine, Redesign) in department stores?

Subquestions:

How does the typology of the department stores allow sustainability aspects to intervene?

How should the temporal retail behave with the ‘permanent’ character of heritage building?

What kind of spatial experience can the strategy of 3R and 5R create using the vacant heritage building in Leiden?
2. METHODOLOGY
Illustration 5.
Parts of Spatial Building Typology Research per Scale
METHODOLOGY

The overall method and structure of the research and redesign will be based on *Architectural Research Methods* by Groat and Wang (2013) and lectures from Research Plan class especially by Klaske Havik titled *Methods of Analysis*. Their take on connection between research and design includes on how to evolve theories, literature, and seven research strategies (historical, qualitative, correlational, experimental and quasi experimental, simulation, logical, and case studies) covers the method needed for overall architectural research. This research generally will select a few of their methods and combine with others when necessary. Below is the scheme for the methodology overview. The methods explained below are divided into the methods used for Spatial Building Typology research which mainly focus on location and theoretical study. Followed by the methods used for the sustainable approach to the vacant department store which begins with theoretical study and then followed by possible methods for the redesign.

**Methodology Scheme**

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<td>Qualitative R on E-commerce</td>
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<td>2D Redrawing Buildings</td>
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<td>3D Model Making</td>
<td>contemporary buildings</td>
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<td>Focus</td>
<td>Sustainable Strategy</td>
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<tr>
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A. Methods for Collective Research – Spatial Building Typology Research of Department Store in Netherlands

To study and understand the vacant heritage buildings, the research begins with Spatial Building Typology of former V&D department stores in the Netherlands. The eight buildings chosen are the ones with heritage building status and the ones we are fascinated with as a group. The method chosen are focused on getting similar type of drawings and information of each building in order to compare them and define the typology of the department stores. Both 2D and 3D method of research will be conducted to study the building better spatially.

1. Location Analysis

The collective spatial building typology research will be conducted with eight chosen former V&D buildings. The main method used are the Haussmann Method. We chose this method because it enables us as a group to research the building in various scale with a format of drawing that is essential and easy to understand. Adapted from the method, we analyse the vacant heritage buildings in four scales which is city, block, building, and façade and roofs. Each of the scales are divided again in components:

1. City Center
   - Historical Development
   - Spatial Developments
   - Relations and Connections

2. Urban Block
   - Components
   - Structure

3. Building Object
   - Accessibility
   - Conclusions

3. Building Object
   - Spatial Configurations
   - Floorplans
   - Sections
   - Structure
   - Circulations

4. Facades and Roof
   - Composition
   - Use of Materials
   - Representations

2. Model Making

As a group making four 3D model of an essence of the building as a tool to learn and representation of the spatial qualities and building elements. The model will be developed in various scale but in a specific dimension which is 30x30 cm. By limiting the dimension, it will be easier to transport the model from home to studio as it is a crucial process in the Covid-19 situation. The materials chosen of the models will be similar from one to another, the same as the 2D drawings that is made with the same style to be able to understand it in a simple way and compare it with one another.

3. Literature Research

Studying theories of typology such as its history and character with literature such as The concept of type in architecture: An inquiry into the nature of architecture by Leandro Madrazo Agudin (1995).
Methods

Model 1
Corner of Leiden

Model 2
Escalator and Void of Leiden
by Xiaohu

Model 3
Entrance of Dordrecht
by Mingyu

Model 4
Facade of Dordrecht
by Alexander
B. Methods for Sustainable Strategies to Vacant Department Store Heritage Building

The spatial knowledge gained from the Spatial Building Typology research needs a redesign approach to respond, use, or adapt to it. The methods used in this approach are selected to bridge the research and design. It is meant to bring the spatial knowledge from SBT to life as a building that lives in the city with the society and the environment.

1. Location Analysis
   - Comparison of Result from SBT Research (Personal Approach)
   Using the results of the collective research to compare the building’s capability to adapt to sustainable approach. Learning the building’s adaptability to function and design are based on Schmidt III and Austin's (2016) book titled Adaptive Architecture. This method is needed to further develop the results of the SBT research and to link with the redesign process.
   - Value Assessment
   The Leiden V&D is a listed heritage building with high values. Therefore, a value assessment of the building is needed based on the book Designing from Heritage by Kuipers and De Jonge (2017). This value assessment will help assist the redesign process.

2. Literature Study
   - Sustainability in Heritage Architecture
   The base literature used in this research is the Reduce Reuse Recycle book by Petzet(2012). His theory and interviews of case studies on applying the waste management system heritage architecture, will be the main theory used for the sustainable approach to the vacant department stores.
   - Sustainability in Retail
   Aligning with Petzet’s(2012) theory, the method used for the sustainability in retail focuses on Esty and Winston (2006) way in applying the 3R of waste management and evolving it into 5R (Reduce, Reuse, Recycle, Reimagine, and Redesign). This method will be used to bridge between the heritage architecture and the function of the building itself.

3. Case Study
   This method will be used after the theoretical research to find applied examples of the ideas. By doing the case study it will give implemented insight and knowledge for the redesign. The method are inspired by Precedents in Architecture by Clark and Pause (2012). The indicators for the chosen case studies are:
   1. Redesign of Retail in Heritage Building
   2. Redesign of Department Stores in Heritage Building
   3. Redesign retail or department store in an existing or vacant building
   4. Current Department Stores or Multi-brand retail design
   5. Retail Design with sustainable strategy
   6. Sustainable enhanced heritage buildings
   7. Temporal interventions in department stores

4. Collecting Qualitative Data from Online Retail Presence
   Jones et al (2015) researched sustainable informations of the world’s leading e-retailers by analyzing their websites. By comparing the
websites, it unravels each company’s strategy in cooperating sustainable value with their brand. Therefore, analyzing the online presence of leading retail in the Netherlands will be useful as a tool to understand their values and if any can be adapted to real life experience of their retail concept.

5. Model Making
To develop the redesign approach spatially, 3D model making will become the tool to visualizing the idea into form. Most likely development models will be made first and finalizing into interior study models, and connection models. The interior study models may be more useful than façade models because the vacant department stores are ‘empty’ on the inside giving so much room for redesign.

6. Sketches
This method is used first in an early stage continuing to the design development to visualize spatial form. The reference used for this method is from Radford et al (2014) that uses sketches as a tool to analyze spatial concepts of buildings. The sketches he used are direct and simple adapting to the use of the sketch.

7. Technical Drawings
Technical drawings are used to develop and visualize the building technology aspect of design. It will become the base knowledge of the structural integrity for the implementation of the 3R strategy. In the redesign process, the drawings will evolve to show the technical aspects and detail of the interventions.
Case Study

The case studies chosen here focuses on redesign of retail. It focuses on permanent intervention on existing buildings and temporary installations. The projects are examples on design ideas that challenges the concept of retail such as including public spaces and other functions into the programme. Moreover, the projects shows intervention on every scale level from connection to the city to the details of display in retail. It shows how one function of retail can connect with the other functions vertically and horizontally.

Fondaco dei Tedeschi by OMA, Venice

Berlin’s KaDeWe department store by OMA


The Link department store and hotel in Vienna by OMA

Tokyo Seibu department store by Nendo

Rain and flowers for installation at Le Bon Marché in Paris by Nendo

3. Expected Result
Illustration 6.
Digital 3D Model of Former V&D Building in Leiden on Site
Expected Result

A. Spatial Building Typology (Collective)

The first phase of the research results in location documents based on the Haussman Method’s (Jallon, 2012) scale levels of eight former V&D buildings. From each scale level, a few indicators that best define the scale are chosen to be compared and studied to identify its typology. For example, in the building object scale, the chosen indicators for comparison are floorplans, sections, structure, and circulation. The comparisons will result in typology of the vacant department stores. The result of the spatial building typology research will be used for individual research which will result in a short paper containing both the collective research and individual research. These result content are combined as a book of spatial building typology research on vacant department stores building.

B. Sustainable Strategy of 3R and 5R in Vacant Heritage Building (Individual)

The individual research begins with using the results of the SBT research by choosing a spatial aspect to further analyze. In this research, the spatial configurations of floorplans are chosen and researched based on Schmidt III and Austin (2016) which results in spatial knowledge for redesign process. To support the spatial aspect research, value assessment (Kuipers and Jonge, 2017) is conducted on the heritage building that results in guidelines of values for the redesign intervention. Moreover, a location analysis is done to analyze the current condition of the context which results possible scenarios and programmes. The results of these analysis are used as the base to implement the sustainable strategies of 3R (Petzet and Heilmeyer, 2012) and 5R (Esty & Winston, 2006) for the redesign project in chosen site. The implemented strategies will be composed to create a design tool that can also be a guideline for other redesign project in department stores buildings with similar typology.

Scheme 5

Expected Result Scheme
Expected Result

Comparison of Floorplans to Find Typology (Collective)

Identifying Type (Collective) and Analyzing Temporariness in Permanence (Personal)
Example of Value Assessment on Skin

Based on Kuipers, M. C., & De Jonge, W. (2017)

<table>
<thead>
<tr>
<th>Skin</th>
<th>Age</th>
<th>Historical</th>
<th>Artistic</th>
<th>Commemorative</th>
<th>Use</th>
<th>Newness</th>
<th>Conflict</th>
<th>Nostalgic Value</th>
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<tr>
<td>Skin</td>
<td>Traces of</td>
<td>The</td>
<td>Expressionism</td>
<td>A landmark of the city center to the society</td>
<td>Everchanging GF Window Display</td>
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<td>Used to host Netherland's Biggest Dept. Store Chain</td>
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<td>skin throughout the years</td>
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Example of Data Analysis of Site

Based on The VA, this Facade will be most likely to be Reused. If yes, How does that effect Scenarios and Intervention?

Depending on the data of footfall, the buildings in this narrow alley has the lowest. Can this be improved? Are the window displays necessary here?

If this facade is to be changed/demolished (because of its medium value), can the materials be Reused?

Highest footfall and the highest value of facade. If so, is there anything more than can be done?

Example on Implementation of 3R Strategy

Reuse

Expected Result
**REFLECTION**

**A. On Sustainable Strategy of 3R and 5R**

Based on initial research and past experiences, the strategy of Reduce, Reuse, Recycle on Heritage Building are easier to be implemented on the later stage of design, the adding part. Therefore, it needs to be defined more how it relates with the building analysis part. As for the technicalities, because only the ground floor of the Leiden building is open, the higher floors are inaccessible without supervisors.

As for the implementation of 5R in department stores, this specificity on the function of department stores can be challenging in terms that the function is at times too defined and not open other kinds of function. One of the solutions in trying to overcome this challenge are with studying study cases of OMA projects that has shown that the design of current department stores welcomes new public functions. However, in the first scenario exercise, it becomes more apparent that the function does not focus on department stores only but also on how the building can relate, work, and exist in the context and current trends. Therefore, the strategy of 5R is potentially not only applied to department stores but to all functions that are applied in the building.

**B. On Research Methodology**

**1. Spatial Building Typology**

The Haussmann Method used to analyse the eight building helps focus the scope of the research and also the type of drawing. The style of drawings chosen that are simple and only the essences are shown eases the comparison process to find the typology. It also helps the collective teamwork into creating a cohesive research book that also supports individual research. Some of the essence model that were made helps to learn and show a more detailed and spatial aspects of the buildings. However, a more comprehensive research on specific topics and spatial analysis for programmes and scenarios in the redesign process needs to be completed on personal research whilst still using the drawings and findings from the spatial building typology research.

**2. Sustainable Strategy of 3R and 5R**

For the individual research there are more variety of methods than the spatial building typology. To create a comprehensive look and results, there needs to be a standard and guideline on how to relate each of these methods. Other than that, the implementation of the 3R and 5R needs to be clear in each of the step, it can be the aspect that connects the methods together.
C. On Relation Between SBT and Sustainable Strategy

The results of SBT helps to describe each building and determine the chosen site based on personal research motivation. By making the drawings for the SBT, it already helps to understand these buildings which gives preliminary knowledge for the personal research. The SBT provides information and analysis of the buildings on each scale levels, but it lacks knowledge on the system of the building and sustainability assessment. The sustainable strategy of 3R (Petzet and Heilmeyer, 2011) helps to structure the sustainability assessment and potential strategies for redesign. Therefore, the individual topic supports the collective research in terms of adding another perspective and indicator of research. Moreover, by having this specific category of strategy, it helps create a design tool that’s possible to be implemented in other department stores building with similar typology.

Regarding the output, the drawings from the SBT were made to be simple and reduced to its essence. However, for the redesign project, the drawings need to be more detailed to understand the building technology and built details. Therefore, the specific drawings made for the individual research can complete the drawings of SBT in a more detailed, analytical, and systematic manner.
RELEVANCE

By conducting Spatial Building Typology (SBT) Research on vacant or poorly functioning former department stores building, it helps gives a dictionary on these buildings for future use and redesign. The different scales used to analyze the buildings gives an overview of the building’s existence in the context from its connection to the city to the spatial configuration of each building. The simple drawings also help those who are not from the architecture field to easily understand the analysis. The knowledge gathered in the SBT result serves as a good base of understanding of these 20th century buildings and the potential it has for future use which can lead to better planning to avoid vacancy.

As for the research and redesign of the new function of the building as stated by Howard (2015, p. 10), department stores shapes consumer society. Since the rise of department stores, it has always tried to challenge the concept of sales and distribution, marketing, and the needs of society. Now, the society are aware about the importance of purchasing items that are environmentally conscious. By using the of 3R (Reduce, Reuse, Recycle) in heritage buildings and 5R (Reduce, Reuse, Recycle, Reimagined, Redesign) in department stores and other new programs, both creates a sustainable strategy that is widely known by society because it was adapted from the waste management system. By researching and redesigning based on these sustainable strategies, it gives a tool and a perspective on how to approach the vacant department store building and a reimagined retail much needed in the society.
CONCLUSION

This research begins with a collective motivation to research Spatial Building Typology of vacant department stores and continues to inspire individual research regarding the sustainable approach of it. By conducting the SBT research, we have learned the building's existing in city scale down to its facades' details. The research provides historical, spatial, and detailed information on the chosen indicators based on the Haussmann Method (Jallon, 2017).

Based on the problem of unsustainable short-lived cycle of retail the Leiden's former V&D currently in, other analysis on the site were done such as detailed spatial configuration analysis, value assessment, and socio-cultural analysis of the site. The spatial configuration analysis is based on Adaptable Architecture Theory and Practice by Schmidt and Austin (2016), from which the theory of loose fit plan and open plan was used based on the floorplan typology of the vacant department stores. Schmidt and Austin (2016) wrote about the building's capacity to adapt, but not specifically on heritage buildings and the value of the heritage building in Leiden is slowly decreasing with its unmatched function of the building. Therefore, a value assessment on the heritage building is done based on Designing from Heritage by Kuipers and Jonge (2017).

Parallel with the building analysis, a socio-cultural research on the site is needed to help determine the programme from redesign. The research is based on Retailising space: Architecture, retail and the territorialisation of public space by Karrholm (2012) in which he wrote retail's connection with the socio-cultural aspect of the surrounding and how they need to be synchronized in order to create a successful retail environment in the city. This research provides socio-cultural research indicators to be analyzed in Leiden for the redesign process.

The theories above explains the condition of the building, the potential of retail, but it has not answered the problem of unsustainable cycle the vacant department store is going through. The possible sustainable solution this research is going be conducted to are based on the Reduce, Reuse, Recycle. Architecture as Resource by Petzet and Heilmeyer (2011) which focuses on how to sustainably deal with our built environment. In this research the
theories and concept of 3R by Petzet (2011) will be used to analyze and redesign the existing heritage building. As for the new function or use of the building, the theories of Esty and Winston (2006) in pushing the Reduce, Reuse, Recycle by adding new theories of Reimagine and Redesign. This approach will be applied to all the new functions focusing on retail, especially department stores. Both the 3R and 5R will become the sustainable strategy that bridges the research and redesign. It will use the knowledge gained from the research and also provides possibilities of programmes and scenarios for the redesign. Lastly, because of the categorized nature of the approach, it can result in a sustainable design tool that can also be applied in other buildings with the same typology.

To conclude, this research thrives to find a sustainable solution on the current conditions of the vacant department stores. A solution that does not revolve only around the physical aspect of building but also to the socio-cultural scene that forms its existence. Although no function of a building can lasts eternally, the beautiful heritage building in the center of Leiden deserves a function that will further increase its value in the city and society.
Spatial Knowledge

Sustainable
Strategic
SBT of
vacant
Department Stores

3R
in
Heritage
Architecture

5R
in
Department
Stores

Flows &
Movements
Values
Bodily Rhythms
Activities
Retailing

Illustration 7.
Sketch of Research Ideas on Site
Scheme 6
RESEARCH-REDESIGN SCHEME

Vacant Heritage Building

Spatial Building Typology
(Collective)
On 9 former V&D Dept. Store Buildings

Location Research
(Personal)
On Leiden V&D

P1 Research

Studio Motivation

Location Indicators

Focus of Spatial Aspect

Problem Statement

Research Aim

Spatial Configurations of Heritage Arch Deparment Stores

Unsustainable Cycle of Department Stores

To form a sustainable synergy between department stores and heritage buildings using an existing sustainable oriented strategy.

Theoretical Framework

Jallon(2017)
Haussman Method
The concept of type in architecture: An inquiry into the nature of architecture.

Jallon(2017)

Schmidt III and Austin(2016)
Adaptable Architecture

Karrholm (2012)
Retailising space Schmidt III and Austin (2016)
Adaptable Architecture

Methods

Literature Research

Location Analysis

Redrawing Buildings

Location Analysis

Redrawing Buildings
What is the sustainable spatial interaction between heritage buildings and department stores by using the strategy of 3R in heritage buildings and 5R in department stores?


Literature Research

Precedent Research

Qualitative E-commerce Research on Trends

Model Making

Spatial Diagrams

Technical Drawings

3D Visualization
REFERENCES
List of Reference with Notes

His explanations and definitions of type are distinct and detailed. Therefore, this dissertation will be the main literature used for Spatial Building Typology Research and Personal Research relating to typology theory.

The main source for the 5R strategy.

The base for the entire research. Their theories on relations between research and design will be used for this study.


The main source of method used for the Spatial Building Typology research. The style of drawing we chose collectively are based on this book because the drawings and diagrams are clear and simple. Moreover, the intrinsic method of drawings makes it easy to compare the buildings.

doi:10.1007/978-3-658-09603-8_3
The inspiration for collective research from retail's online presence.

This book discusses how retail spaces forms the urban tissue, primarily the public space. Instead of using the common word of 'place', he uses the word 'territory' to explain boundaries, limits, and restriction. These territories are a continuous experience from the retail space, public space, into our homes. The content can be useful in connecting the former V&D buildings and its surrounding territories such as public spaces.


Pallasmaa, J. Newness Tradition Identity. His perspective at incorporating tradition into something new and modern is interesting because he focuses on the identity rather than mimicking style or form.

Petzet, M., & Heilmeyer, F. (2011). Reduce, Reuse, Recycle. Architecture as Resource (German Pavilion, 13th International Architecture Exhibition, La Biennale di Venezia 2012). Ostfildern: Hatje Cantz. I first read this book as a n assignment last semester and I found use of the waste management system Reduce Reuse Recycle gives the design approaches a new breath of sustainability in a language that is familiar. This book will be the main argument and source for the Reduce Reuse Recycle strategies for the heritage architecture.

Ritzer, G. (2014). Automating prosumption: The decline of the prosumer and the rise of the prosuming machines. Journal of Consumer Culture, 15(3), 407-424. doi:10.1177/1469540514553717 A journal on the continuous, ambiguous, and intermingling of production and consumption between the producer and consumer in retail industry. Although one of his main study is the McDonalds system of presumption and the use of machines. I do think that there are some technical principles that can be developed into the fashion retail.

Strählé, J. (2017). *Green fashion retail*. Singapore: Springer. This book will be the main source for the green fashion retail. It has abundant insights on the supply chain management and the current efforts the fashion industry are doing to be more environmentally sustainable.


Websites:


