Considering adaptive reuse within the municipal portfolio

How municipalities may change their decision-making process in the initiation phase of adaptive reuse when managing the real estate in their portfolio.

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-
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Technical University of Delft

COLOPHON

ADAPTIVE REUSE

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Title: Considering adaptive reuse within the municipal portfolio - How municipalities may change their decision-making process in the initiation phase of adaptive reuse when managing the real estate in their portfolio.

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PREFACE

This master thesis presents the result of a research in the graduation lab 'adaptive reuse', which is one of the topics in the domain of Real Estate Management. This domain is part of the master track: "Management in the Built Environment" from the Architecture faculty at the Technical University of Delft in the Netherlands.

The research combines two concepts that I have felt a growing interest for over the course of my studies. The first is adaptive reuse and the second, public real estate.

Adaptive reuse is a real estate strategy that does not merely consider demand, but also carefully examines the supply. The existing built environment often holds objects with a very specific history, identity and intangible value. I believe that we should try to preserve what we have. It makes the urban landscape a more conscious and sustainable place. Where one feels connected with the building instead of merely the activity that it accommodates.

At first hand, the local government seems old-fashioned, slow and bureaucratic, but the result of actions taken have an enormous impact on the liveability of cities. Of our cities. They are the initiators, developers and preservers of the built environment by managing most of the public real estate. And what they do is much more than merely making profit. One of their main objectives is to increase social relevance and serve the public good.

The bureaucratic character of the local government, or any government body for that matter, did result in being somewhat behind on the formulation of clear real estate strategies and processes compared to the corporate sector. However, they are attempting to move forward and adopt more sustainable strategies, like adaptive reuse. Justification of actions and performance complicates the process.

With my personal interest in systematically solving problems, order and clear-cut overviews, this research is focused on developing a decision-making tool which will help the municipality in deciding upon what to do in case of adaptive reuse within their portfolio. Should they adapt the building or should they leave it up to the market? A tool that acknowledges several tangible criteria, while also considering societal goals and intrinsic value.

I would like to thank my first mentor Hilde Remøy and my second mentor Reinier van der Kuij for their feedback, support, inspiration and difficult (but most necessary) questions, during our meetings. It kept me focussed and helped me to understand that sometimes more is not better, but being concise is the key.

Moreover, I would like to thank Maarten Groenen and the other consultants of ICSadviseurs during my time there as a graduate intern. The discussions have helped me a lot in putting my research into a more practical perspective, while the interest and support kept me motivated to keep going and reach my goals.

Lastly, my thoughts go out to my departed grandfather. At a very young age, he was the one who inspired me to seek an interest in architecture and the built environment. His stories and massive, hand-made drawings motivated me to pursue a study where I could combine creative thinking with technical understanding. He was my most important supporter during the first few years of my study and never ceased to show how proud he was of me.

Marieke Slits
Rotterdam, October 2017

SUMMARY

Abstract

The economic crisis, demographic changes and increasing vacancy of real estate in the city urges us to question how we cope with the new needs of the city, and how these can be combined with the existing built environment. Adaptive reuse, as a concept of reusing pre-existing structures for new purposes, has become an increasingly appealing option. Not only because of the recognition of the effects on climate change by the built environment, but also the realization that adaptive reuse can make a considerable contribution to the formulation of strategies for sustainable, future-proof cities. A growing interest in adaptive reuse can also be identified in the public sector. It is now recognized by public organisations, like municipalities, that real estate cannot merely be managed and preserved by simple maintenance. However, the uniqueness of every adaptive reuse project contributes vastly to the complexity, and it appears that many municipalities are currently not equipped to deal with these kinds of projects. Moreover, it is arguable whether they should execute the adaptive reuse themselves, because of all the involved risks, numerus commitments and the fact that they are dealing with public money. But how should they then act whenever dealing with an object within their portfolio that is eligible for adaptive reuse? A concise strategy is needed to provide municipalities with the means to make a fitted decision that can be properly justified to the other stakeholders. In general, one could argue that there are several alternative options, but what option would be the best for that specific situation? Therefore, the main research question is: *"What criteria need to be considered when deciding upon adaptive reuse within the real estate portfolio of municipalities?"* The result of this research is a tool in which the identified criteria are implemented in a comparison matrix which is used to discuss and assess the different alternatives. The comparison matrix is integrated into a step-by-step plan subdivided into two phases. The developed tool provides the municipalities with a structured decision-making process, which can be used to maximise transparency, stimulate critical thinking, optimise MREM and initiate the right discussion.

Keywords: *adaptive reuse, municipal real estate management, decision-making, public real estate*

I. Introduction

At the end of the nineties, there were plenty of opportunities to finance new greenfield developments all over the Netherlands. However, in the last couple of years it has become clear that the way in which we can use, and are using our built environment has changed (Van der Groot, 2014). This calls for a new way of looking at real estate in the Netherlands, particularly looking at the real estate that is already there.

Adaptive reuse - also referred to as 'retrofitting', 'transformation', 'conversion', 'adaptation', 'rehabilitation' or 'refurbishment' – of a building was for a long time seen as idealistic, unaffordable and therefore not achievable (Grootswagers, Linskens, & Helleman, 2013). However, due to the decreasing opportunities for greenfield developments and a new recognition of the positive effect of adaptive reuse on a cities sustainability and regional identity, adaptive reuse has become an increasingly appealing option.

A growing interest in adaptive reuse can also be identified in the public sector. In the Netherlands, there has traditionally been a strong government involvement in spatial planning (Van der Groot, 2014). This involvement also applies to adaptive reuse and as a reasonable amount of the real estate in the Netherlands is owned municipalities, they are tasked with acting upon these changes. They must shift from real estate management that is merely focussed on monitoring and maintenance, to preservation by functional change to guarantee a prolongation of the building's lifespan (Haarmann, Dagevos, Tomor, & Janssen, 2015).

Adaptive reuse is however often not a clear-cut process and the successful implementation of adaptive reuse comes with several big challenges (Andriessen, 2007; Bullen & Love, 2011; Douglas, 2006; Strange & Whitney, 2003; Strumiłło, 2016). Which results into adaptive reuse projects being perceived as less controllable (Andriessen, 2007). Moreover, in addition to these challenges, the municipality, as a public authority, not only has to consider their own objectives and financial viability, but also that of their city and residents. Dealing with adaptive reuse within the municipal portfolio therefore requires a concise strategy or process. However, it appears that many municipalities do not have the capacity to deal with these questions or have the means to properly justify their decisions for choosing to deal with their real estate in another way. Duijn (2009, cited in Duijn, Rijnveld, & Hulst, 2010, p. 232) states that, especially in the context of complex projects, "[…] the public policy domain is often riddled with competency disputes between public policy actors, political conflicts, and ever-changing opinions of (societal) stakeholders that are amplified by the media".

2. Problem statement and research question

The added complexity, due to tension between interests, more requirements, more actors, more uncertainty and more financial considerations while dealing with less opportunities related to form and structure, results in long trajectories that are almost always unique. As owner of a considerable amount of real estate, the municipality could initiate and facilitate the implementation of adaptive reuse. However, the extra challenges posed upon the municipality make it difficult to set up a process, as it is unclear what the options and their implications are. Resulting in the tendency to fall back to opportunistic and pragmatic solutions or no solution at all. Moreover, as they face multiple responsibilities, it is arguable whether executing adaptive reuse, with the involved risks and commitments, should be part of their task description at all.

A concise strategy is needed to provide municipalities with the means to make a fitted decision in the initiation phase that can be properly justified to other departments within the municipality, but also to involve and inform market parties and the public. In general, one could argue that there are several alternative options. The most straightforward options would be: adaptive reuse by the municipality or adaptive reuse by the market. But deciding upon the best option for a specific situation is the difficult part. Especially when you need to find a solution that answers both to the organisational objectives as well as the public responsibilities. Therefore, the main research question is: *"What criteria need to be considered when deciding upon adaptive reuse within the real estate portfolio of municipalities?"*

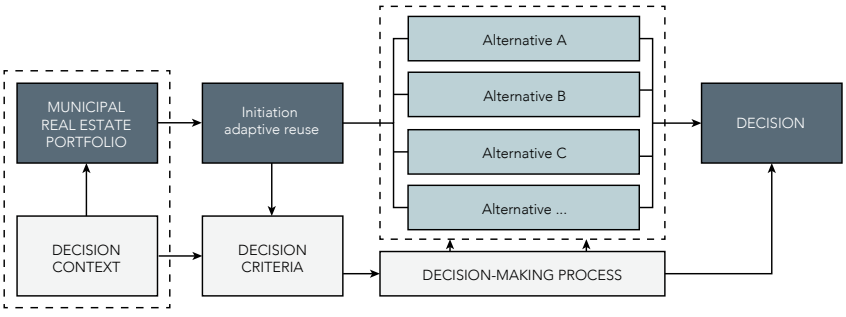


Figure 1 Conceptual framework (Own ill.)

3. Research method and design

The research design is based on the concept of qualitative research. According to Bryman (2016, p. 375), qualitative research can be defined as "[…] an inductive approach on the relationship between theory and research, whereby the former is generated out of the latter...the stress

is on the understanding of the social world through an examination of the interpretation of that world by its participants". The aim of the research is to identify the criteria that need be considered in the decision regarding adaptive reuse. Wherein it is also important to determine in what context the decision takes place and in what way the criteria can be used in the decision-making process (see figure 1). To devise a solution for the problem statement and give answer to the research question, several research methods have been used for the collection of data and the selection of site(s).

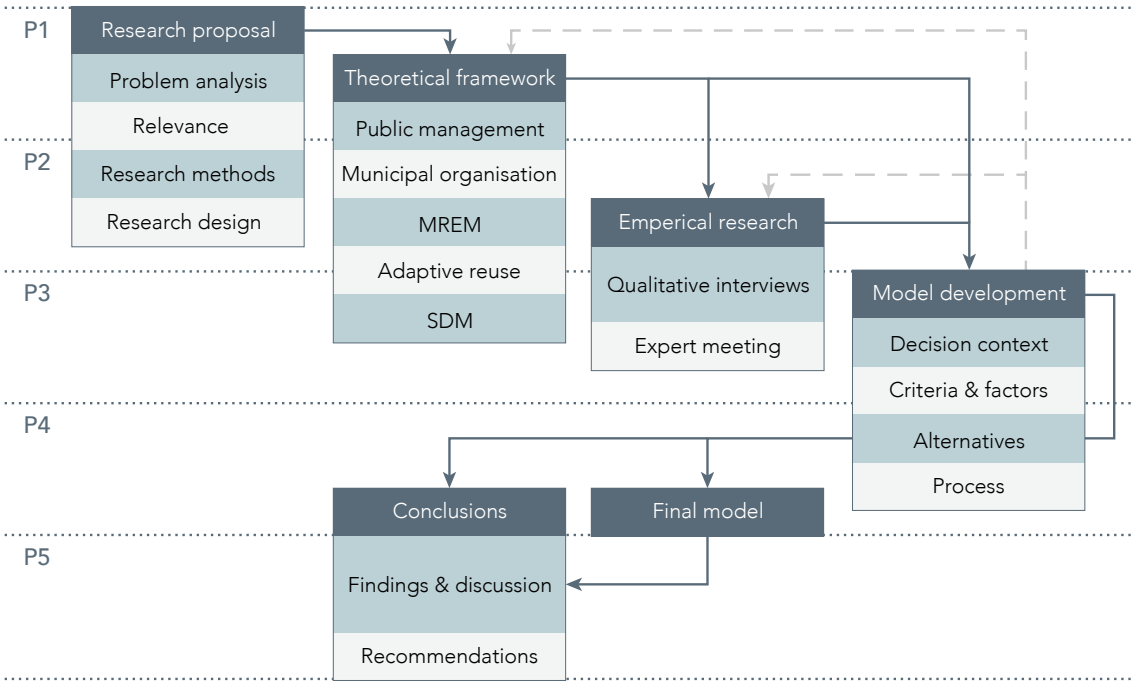


Figure 2 Research design (Own ill.)

Literature study

The start of the research was characterised by the collection and analyses of literature to formulate the theoretical framework. The subjects studied included: public management, the municipal organisation, municipal real estate management, adaptive reuse and structured decision-making. These subjects were considered in order to capture information about the context in which the decision-making of adaptive reuse within the municipal portfolio takes place.

Qualitative interviews

More in-depth views from practice were obtained through semi-structured interviews. The method of qualitative interviewing was used for two purposes. The first was to pinpoint the criteria that are truly important in the decision-making process that is the subject of study. The second was to study processes of decision-making and strategies currently employed in practice. Qualitative interviewing was used instead of quantitative interviewing, because the interviews were not aimed at finding direct answers. The aim of the qualitative interviews was to get insight in what the interviewees (employees of different municipal real estate departments) see as relevant and important when describing a certain process (Bryman, 2016).

From the client database of ICSadviseurs, twenty municipalities where selected based on two criteria: (1) size of the municipality, and (2) short term availability of an employee of the real estate department. From the twenty municipalities contacted, twelve employees agreed to participate in the research. Prior to each interview the interviewees were informed about the cause and the purpose of the research, in addition to the topics of the conversation.

Expert meeting
An expert meeting was organized to discuss initial results from the literature study and validate the preliminary results of the qualitative interviews. The expert meeting was used as a method of understanding on how the individuals, experts in this case, react to and discuss the specified topic of adaptive reuse within the municipal portfolio. As Bryman (2016, p. 501) argues, the interest is in "[…] such things as how people respond to each other's views and build up a view out of the interaction that takes place within the group". Which is comparable to the idea of the tool. Where municipal real estate managers are not the only individuals involved in the decision-making process, but are required to discuss the issue with several stakeholders with possibly dissimilar views and objectives, while in the end formulating an agreement that is widely supported.

4. Theoretical framework

Public management

Public management as the study of government, its structures, processes, functions and societal management has known several developments over the years. The concept emerged in the 1980s based on the idea that greater attention should be paid to achieving results and managerial responsibility. Organizations should be more flexible, objectives measurable, evaluations systematic and privatization should lead to a reduction of government involvement (Hughes, 2012; Van den Dool, Van Hulst, & Schaap, 2010). The goal of public management is to maintain a proper balance between management effectiveness and the functioning of the local democracy.

In the Netherlands, the 1980s radical cutbacks formed a stimulus for reorientation of local government affairs (Hendriks & Tops, 1999). The assumption that the management strategies lacked market discipline let to the introduction of New Public Management. The concept of the NPM however also received criticism and at the end of the 1990s, some opted that the 'corporate' focus was overdone and interests of residents were given little attention. Interactive policy-making and participative decision making became the buzz phrases of those times. At the start of the 21st century, another financially difficult time arrived, which marked the emergence of another trend that influences governmental proceedings. It is now argued that public functions are no longer exclusively government domain. Actors from various public authorities intervene in the policy and decision-making, seeking co-production of public management. While simultaneously, governmental bodies are nonetheless being requested to account for their performance and capacity. According to Van den Dool et al. (2010) the municipality faces five dilemmas in performance assessment. On the one hand there is uniformity, but on the other hand local context. One seeks effectiveness, while keeping legitimacy. There is self-evaluation versus external assessment. An internal focus as well as an external focus. And finally, there is regular measurement versus measurement when needed.

In an attempt to define and generalise public management and government involvement Hilb (2006) and Woldendorp and Keman (2007) sought to delineate the different strategies. Both theories combined, portray four generic strategies, ranging from active to passive strategies, based on the amount of control and direction taken or given. These strategies include: the guiding strategy, the congruent strategy, the cooperative strategy and the passive strategy.

Municipal organisation

The municipal organisational structure in the Netherlands is largely based on the Municipal Act of 1851 (Hendriks & Tops, 1999). The Act stipulated the rules for the governing bodies of the municipality, which include the city council, the board of mayor and aldermen (M&A) and the municipal civil service. The city council is the highest power, directly elected by the residents

and is the controlling organ of the municipality. They decide on the budgets and overall governance. The board of M&A is part of the executive organ, they are appointed by the city council with the task of regulating and administering internal affairs. The other part of the executive organ is the municipal civil service. All the decisions made by either the city council or board of M&A are prepared and implemented by municipal civil service (Government of the Netherlands, n.d.; Van den Noort, 2011). Further departmental structure differs vastly per municipality. The three generic organisational models currently used include the secretarial model, the sector model and the tilted sector model.

The size and structure of the real estate department varies per municipality as well. Smolders (2013) noted in their research that only half of the municipalities had centralised their real estate into one department, and 49% of the respondents did not have a formal real estate strategy. Nonetheless, interest in real estate management has grown considerable in the last ten years. Disappointing income statements and the trend to optimize efficiency and risk control, has let to a more serious approach towards portfolio management.

Municipal real estate management

Municipal real estate management (MREM) is defined by Van den Beemt-Tjeerdsma and Veuger (2016, p. 135) as "[…] the management of a municipal's real estate portfolio by aligning the portfolio and the services to the needs of the municipal organisation as well as the governmental or municipal policy goals, to balance strategic, functional and financial interests and to contribute optimally to a liveable community". The objective is therefore not primarily to maximise profit, but also to optimise social and political outcome.

In principle, the municipality is only legally obliged to provide accommodation for education. Nevertheless, they often own a considerable amount of real estate. Where every municipality employ their own categorisation, the municipal real estate can be generally classified into four categories: accommodation for policy support, accommodation for external processes, accommodation for internal processes and other.

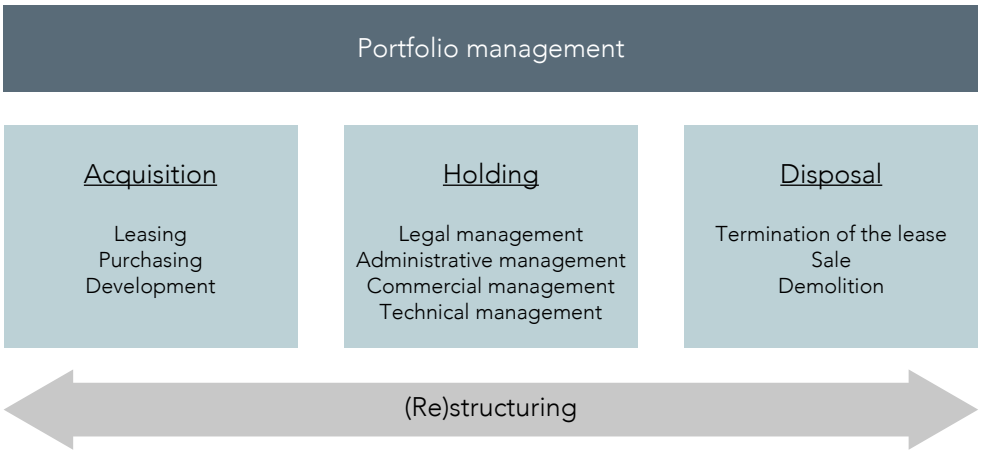


Figure 3 Portfolio management - Visual representation of the basic portfolio management strategies in MREM (Vastgoedbedrijf Zoetermeer, 2013)

In MREM proceedings there are generally four management "actions": acquisition, holding, disposal and (re)structuring. Strategies are needed for each of these actions as random implementation of decisions will most likely not result in a favourable situation regarding the municipal objectives. O'Mara (1999, cited in Van den Beemt-Tjeerdsma & Veuger, 2016) describes three generic strategies that can be used, including the incremental strategy, the standardisation strategy and the value-based strategy.

Adaptive reuse

Adaptive reuse as real estate strategy is employed with the aim of adapting a building to a new use in order to extend the lifetime of the building. In many ways, the process of adaptive reuse is similar to traditional building projects. Nonetheless, there are also considerable differences as one is dealing with an existing building. When comparing the process to a traditional project, with a newly constructured building, it becomes clear that there is more time and knowledge required during the first phases of the project. Research should be conducted to determine the state of the building, because one is not dealing simply with a "blank canvas" and the existing structure needs to be considered when defining the new design. Deciding upon adaptive reuse therefore requires careful consideration of the alternatives and consequences. Over the years, numerous articles have been written about the criteria and factors that should be considered during a decision-making process. These criteria focus mostly on determining the adaptive reuse potential of the building.

According to Mısırlısoy and Günçe (2016), a successful implementation of adaptive reuse also requires identification of the actors. "Actors can be defined as the stakeholders that have a role in the adaptive reuse decision making"(Mısırlısoy & Günçe, 2016, p. 93). Roles identified in literature include e.g. the user, producer, regulator, investor, owner, initiator, neighbours and interest groups (Grootswagers et al., 2013; Mısırlısoy & Günçe, 2016; Pallada, 2017).

Structured decision-making

Structured decision-making is according to Gregory et al. (2012, p. 6) "[…] the collaborative and facilitated application of multiple objective decision making and group deliberation methods to environmental management and public policy problems… an SDM process is to aid and inform the decision makers, rather than to prescribe a preferred solution". Saaty (2008) continues by arguing that obtaining information about everything does not necessarily translate in better judgement, but knowing the right priorities is key. The difficulty, however, in collective decision-making lies in the different positions, preferences and perspectives of the various stakeholders.

From summarizing the different approaches described in literature it is assumed that the process starts with the identification phase where the problem is identified and the decision context clarified. Followed by a development phase in which the objectives and measures are determined and compared to the alternatives. After which a weighing of priorities leads to the selection and authorization of one of the alternatives in the selection phase. Furthermore, it should be noted that processes are rarely according to plan and interrupts are bound to happen. These interrupts could occur because of scheduling, feedback and timing delays, as well as unexpected speedups, comprehension cycles and failure recycles.

5. Empirical research

Qualitative interviews

Each of the municipalities were interviewed to understand the context and practices of the following aspects: organisational structure, influences from market conditions and political constraints, general real estate strategy and their perspective on adaptive reuse.

Organisation

By 2014, most of the interviewed municipalities have adopted some form of centralised real estate department. According to one of the interviewees the reason for concentrating all the tasks under one section was threefold. It was to ensure that the real estate can be used to its full potential. The bundling should increase expediency in development and exploitation, and all knowledge about the real estate would be concentrated and therefore could be better

used. Another interviewee stated that before centralisation of the real estate, they noticed that there was no cohesive cooperation. The current supply was often not considered by the other policy departments.

Market conditions and political constraints
Market conditions differ considerably when comparing the different case studies. Some municipalities must deal with vacancy and a decreasing population, while others are searching for ways to build more housing as soon as possible. Political constraints were in general noted as the requirement to describe proceedings in policy documents and adjust real estate management to facilitate requirements from other policy departments. In the larger municipalities, this was in most cases all, except for the fact that the size of the organisation often causes delay in the authorization of actions. In the smaller municipalities, there was more political involvement.

General real estate strategy
Most of the municipalities have now described their real estate strategy in some form of policy document. Within these documents, they describe the strategies regarding disposal, lease, maintenance, development and vacancy. One interviewee stated that their proceedings are based on one motto: "No real estate, unless..". Ownership of real estate is no goal per se, but municipal real estate can be used as an instrument to contribute to the achievement of public goals. This was acknowledged by many of the interviewees. Devising tools and matrixes to evaluate the performance of the objects in the portfolio was a trend visible in several of the case studies.

Adaptive reuse
The perspective on adaptive reuse differed vastly per municipality. Some were experienced with adaptive reuse, while others did not even consider the option of adaptive reuse. They believed that demolition, to make way for new construction, was much more viable. When they did consider adaptive reuse, one of the most important criteria was the function. Many of the interviewees stated that the function, in combination with municipal policies, determines whether they would hold or dispose of the object. Other criteria mentioned most often were; the location within the city, the strategic purpose, planning constraints and market conditions.

Expert meeting

Present at the expert meeting where twelve advisors from ICSadviseurs and a representative of the expert team transformation, I. van Leeuwen. The expert team, initiated by the RVO, supports municipalities and other interested parties with adaptive reuse concerns. At the start of the expert meeting the experts first received a short introduction about the definition of adaptive reuse and were then asked to contemplate about the opportunities, challenges and considerations that should be made by the municipality.

Considerations criteria and process
According to the experts, larger municipalities have more expertise and experience in adaptive reuse and the preservation of the built environment. However, one of the experts stated that there is an increasing interest from medium and small-sized municipalities to investigate the options of adaptive reuse. They are looking at what is possible instead of what is not possible.

Amongst the experts there was also a discussion insofar as the municipality should focus on the tangible as well as the intangible values. One expert argued that they should look further than just tangible values. What does the object mean to society? Which values are of importance to the municipality? Another thing one could question is. What kind of municipality is it and in what direction does it want to develop itself? Another argued that we are constantly

in transition. Moving from one situation to the next resulting in an ever changing context.
It was also opted that the municipality should not execute adaptive reuse themselves. They should not take on the role of developer, because this is simply not part of their core tasks. However, it was also recognised that in case of vacancy, selling the object to the market is not always the solution. The market parties might also not want to invest, because they don't know what kind of function should be accommodated in the object.

Opportunities and challenges
During the expert meeting, the experts also identified several opportunities and challenges that should be considered as well, when dealing with adaptive reuse.

Opportunities
- The possibility of forming partnerships
- Conditions of sale to ensure certain objectives
- Participation and cooperation
- Be the integral actor
- Bottom-up initiatives

Challenges
- Accountability towards different parties
- Distrust between public and private
- Focus on the right aspects
- Role objective should be clear
- Political rigidity

6. Findings

Decision context

Why is there a need for structured decision-making in municipal adaptive reuse processes? The need foremost comes from the fact that adaptive reuse is still seen as a difficult trajectory. Resulting in a reluctance to employ the strategy of adaptive reuse, but also an unawareness on how the municipality could facilitate or guide the market in executing adaptive reuse. Literature does show that there is an overall growing interest in the principles of MREM. These findings can also be discerned when looking at the different case studies. Almost all municipalities have initiated some form of centralisation of the municipal real estate in the last sixteen years. In addition, almost all interviewed large-size and medium-size municipalities have devised decision-making tools. The interviewees of these municipalities stated that they use, or are planning to use, these tools to assess the real estate in their portfolio.

How and why are these decision-making processes initiated? To understand the project scope within the decision context, one must also understand the trigger of the process. The possible triggers for initiating the decision-making process are either based on the recognition of obsolescence or through the arising of an opportunity.

The final step in outlining the decision context is to devise an overview of the actors. Which stakeholders are involved? What are their objectives and their subsequent roles? In the theoretical framework, it was established that the municipality is divided into three municipal organs: the controlling (city council), executive (board of M&A) and managing organ (municipal civil service). These organs can be further subdivided into several actors. Combining these findings with the findings regarding the involved actors in adaptive reuse projects results into an overview of eight actors (Table 1) that are of importance in the decision-making process.

Decision process

According to Saaty (2008), making a decision in an organised way requires structuring and decomposing the decision into understandable parts. He suggests that the decision is to be structured in a decision hierarchy, in which, through intermediate levels, the decision is decomposed from a broad perspective to a more detailed perspective. The decision hierarchy

Actors	Role	Objective
City council	Controller & Investor	Acts as the controller and investor, with a strategic focus on real estate. The city council sets targets and makes the final decisions. Their main objective is to maximise utility while minimizing financial resources. But the main objective is to optimise social and political outcome.
Board of Mayor & Aldermen	Controller & Policy maker	Acts as the controller and policy maker with a strategic focus on the process. The board of M&A is the director over the different municipal departments. They monitor compliance with the targets of the city council and stipulate what policies need to be devised. The main objective is to minimize political.
Director department	Controller & Policy maker	Acts as the controller and policy maker, with a strategic focus on the process. The director of the policy department could be regarded as the official client of the municipal civil service. He monitors and directs the policy department.
Policy manager	Policy maker	Acts as policy maker, with a strategic focus on the institution. The policy manager is the accommodation applicant towards the real estate department and acts as the link between the real estate department and the tenant/user.
Real estate manager	Owner	Acts as owner and technical manager, with a focus on the operational side of the process. Within proceedings the real estate manager is the contracting authority. Their objective herein is to maximise utility and minimise resources, while working within the societal and political context.
Tenant	User	The tenant uses the building. Whether it is right now or in the future. They can therefore give an indication of what accommodation is needed.
Market	Investor or Initiator	Acts as a possible investor or initiator in the process with a focus on the real estate object.
Public	Neighbours & Interest groups	Acts as a neighbour and interest group and should therefore be considered to make sure that plans are not opposed.

Table 1 Actors - List of actors and their roles, involved in the decision-making process

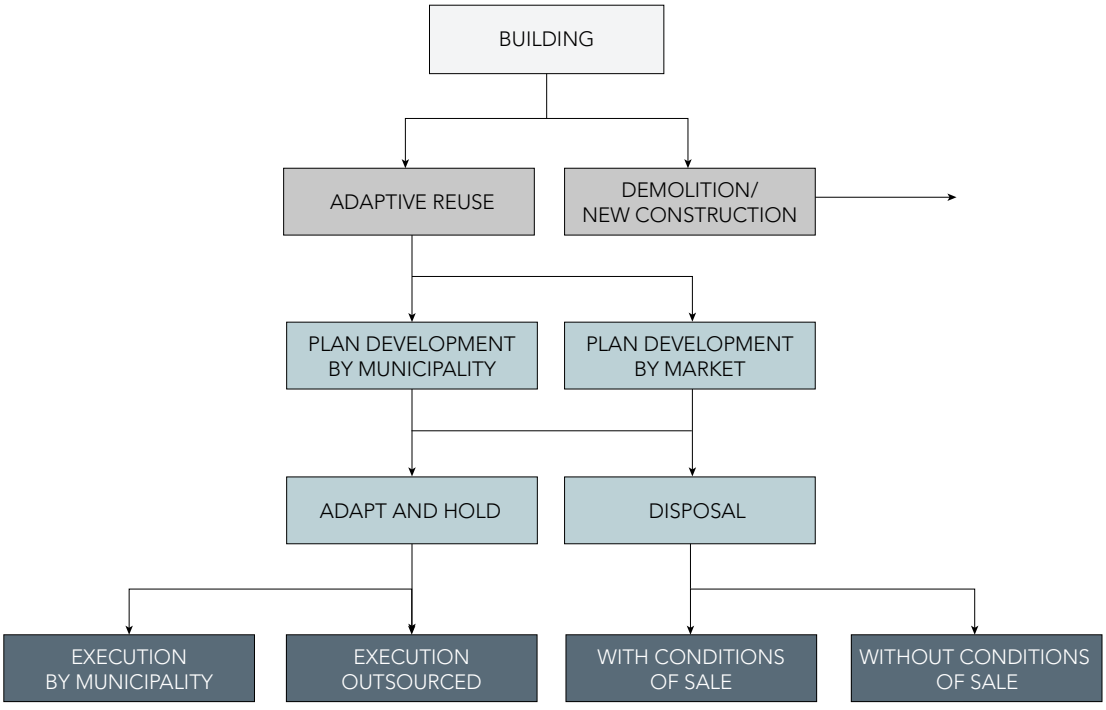


Figure 4 Decision hierarchy - Visualisation of the decision hierarchy and the four alternatives (Own ill.)

for this research, portrayed in figure 4, consists of five steps, the first is the building, the initiation of the decision process. The second step is the decision between adaptive reuse and demolition. The third step is the decision regarding the plan development, and the fourth step the decision regarding the question to whether the municipality should hold on to the object or dispose of it. While the last step determines in what way the project should be executed. What can be concluded is that there are, at the bottom of the decision hierarchy, in principal four alternatives. These include: execution by the municipality, execution by a third party, disposal with conditions of sale and disposal without conditions of sale.

The next part of the decision process is to determine in what kind of process the decision-making will take place. From the theoretical framework and empirical research, it can be concluded that the process should consist of several steps, sub-divided into clear phases to value and compare the different alternatives. By means of the studies on SDM adaptive reuse processes, it is concluded that the process consists of two phases, including: (I) identification of the decision context, (II) development and selection of alternatives. In the first phase, recognition, diagnosis and initiation are key steps to understand the objective and identify actors. Especially the latter is important for the continuation of the process, because identification of the actors in each of the steps is necessary to have the correct information available in the assessment of criteria. In the second phase, the initial exploration, an intermediate authorization, detailed assessment and final evaluation and authorization are the key steps.

Decision criteria

The final aspect in the development of the tool is defining the decision criteria. Herein it is important to determine both quantifiable as well as the "hard-to-quantify" values (Gregory et al., 2012). According to Saaty (2008) it is that through intermediate levels with criteria and sub-criteria one can systematically structure the decision hierarchy all the way down to the lowest level with alternatives.

The criteria found in literature regarding adaptive reuse and real estate management were analysed and weighed on their relative importance by means of the empirical research. This resulted into a set of key and sub-criteria.

The key criteria include:

- Eligible function: Whether a future function for the building has been determined and what kind of function it entails;
- Marketability: An objectified judgement to establish whether the object would be easy to sell or more difficult to sell;
- Strategic purpose: The degree to which the object could be of strategic use to build a future proof portfolio;
- Management strategy: The willingness to take control over proceedings or give direction to initiate development;
- Initiative: Whether there was an initiative at the start of the process;
- Benefit-cost ratio: The degree to which the benefits outweigh the costs and whether this is in line with objectives.

The sub-criteria include:

- Representativeness: The image-determining, aesthetic value of the object that could hold a certain sense of representativeness for the city;
- Historical and/or cultural value: Historical or cultural values that could press the importance of careful preservation;

- Liveability: The degree to which the object contributes to the liveability and social cohesion of the area;
- Urban masterplan: Whether the object is upon a location of interest, which has been described in the urban masterplan or municipal vision and subsequently has been given a certain direction by the municipal council;
- Size: The size of the project based on the financial commitment;
- Complexity: The perceived and expected complexity based on the identified aspects that influence the project (in)directly;
- Staff capabilities: The available capabilities and expertise;
- Timing: The timing and time horizon of the project;
- Planning constraints: The public law instruments and spatial planning procedures that need to be considered during the process;
- Partnerships: The option to form a partnership with a market or public organisation.

Each of the criteria found, should then be incorporated in the process in a coherent and clear manner. In determining what approach would be best suitable for this tool, it is necessary to determine the function of the model. What was seen as important was that the indicators should be assessed simultaneously, as one indicator does not immediately outweigh another. The tool should therefore facilitate the comparison of different sets of criteria at different points in the decision hierarchy. The comparison matrix, which was also suggested by Saaty (2008) and CPI and Aedes (2014), in combination with several guiding questions, is therefore assumed to be the most appropriate. First, because the matrix offers opportunity to integrate the steps identified in the previous paragraph. Second, because valuation and weighing of criteria can be done simultaneously. While in a flowchart one criteria would automatically determine the next step and a checklist or mathematical multi-criteria decision model is more appropriate for criteria with tangible values. The comparison matrix is also the most appropriate when using it for discussion, because values are debatable and can easily be considered relative to other criteria.

The tool

Decision-making is always a consideration between context and value. It is assumed that you will strive for the highest value, but due to the context you are restrained with a certain outcome as result. The basic idea of the developed tool, a comparison matrix and accompanying step-by-step plan, is that there are a fixed number of options, or alternatives, from which to choose. Deciding upon one of these alternatives is done by considering the context and the implications on certain values. It should be noted that it is a concept tool, as the practical implementation of the tool has not been tested.

The tool is used to value the criteria, stimulate critical thinking of the consequences and offer an initiator for discussion. It consists of two parts, the first includes the comparison matrixes with the identified key criteria and sub-criteria. Each of the criterions is described by means of a question and several answer possibilities. By filling in either A, B, C, etc. for each question, the tool provides an overview of how the answers correspond to the alternative options. Once filled in, the tool gives a suggestion to which alternative would be the best alternative for that specific situation.

The second includes a step-by-step plan used to place the comparison matrix within a process usable within the context of MREM. The step-by-step plan consists of seven steps divided over two phases. For each of the steps it has been determined, based on the theoretical framework and empirical research, which actors should be involved in that specific step. Note that when an actor is portrayed as dark blue, their involvement is required, whereas the grey colour shows that involvement is optional and should be determined in the first phase.

STEP-BY-STEP PLAN

ACTORS

PHASE I – Identification of the decision context

The first phase of the decision-making process is the identification of the decision context. Within this phase, it is key to explore the adaptive reuse potential and determine the scope of the decision.

Step 1: Recognition

What triggered the initiation of the decision-making process? Start with the recognition of the trigger. Was the process triggered by obsolescence or by opportunity? A quick consideration of the available information is sufficient to determine what caused the initiation of the process.

- Identify the trigger;
- Determine which stakeholder initiated the process.

Real estate manager

Policy manager

Step 2: Diagnosis

Is the building suitable for adaptive reuse? Before adaptive reuse is initiated the potential and feasibility of the adaptive reuse of the building should be established. A quick scan by means of an adaptive reuse potential model can be deployed to determine whether adaptive reuse should be initiated or the building should be demolished and make way for new construction.

- Determine by means of a quick scan whether the building is suitable or unsuitable for adaptive reuse.

Real estate manager

Policy manager

Tenant

Step 3: Initiation

When the adaptive reuse potential of the object is established. The process continues with the third step. What is important in this step is to understand who is involved in the process, what the timeframe is wherein the decision should take place, what the overall building characteristics are and whether there is a function that could be accommodated in the object.

- Identify the stakeholders (actors) that should be included in the assessment of the criteria and when;
- Determine the timeframe in which the process should take place;
- Evaluate the political context;
- Perform a quick scan on the building characteristics;
- Organise a meeting with the policy departments and/or market parties to determine a possible function.

Real estate manager

Director department

Policy manager

Tenant

Market parties

STEP-BY-STEP PLAN

ACTORS

PHASE II – Development and selection

The second phase of the decision-making process is the development and comparison of the key and sub-criteria. Within this phase, it is key to first value the key criteria and make an initial exploration of the alternatives. Possibly to determine whether any of the alternatives can already be disregarded. Followed by a more detailed assessment by means of the sub-criteria in order to determine which of the alternatives would be the preferred strategy.

Step 4: Initial exploration

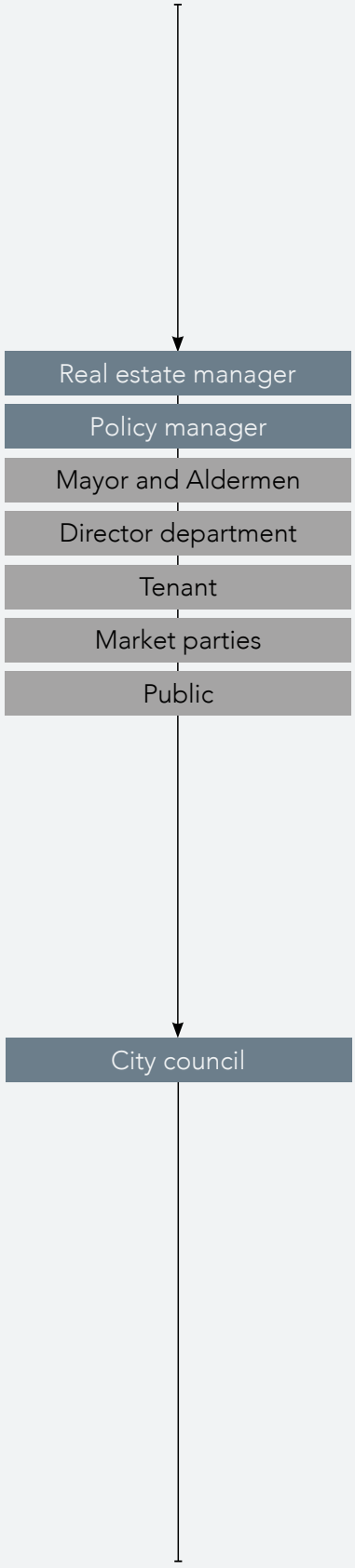
By means of a comparison matrix in which the key criteria are identified, an initial exploration of the preferred alternative can be done. The key criteria include: eligible function, marketability, strategic purpose, management strategy, initiative and benefit/cost ratio. What is important to know is that from the five identified alternatives. There are, based on the plan development and hold versus disposal considerations, seven different paths. This exploration is used to determine whether there are any alternatives or paths that can be disregarded immediately and which alternatives should be considered in the detailed assessment.

- Value the key-criteria in comparison matrix 1 (figure 5.1), together with the identified stakeholders;
- Evaluate and discuss the outcome;
- Reconsider objectives when there is no desirable outcome;
- Write a proposal for the intended strategy based on the initial exploration.

Step 5: Evaluation & Authorization

What was the outcome of the initial exploration and what would that mean for the continuation of the project? This step regards a first evaluation of the results in the comparison matrix and presentation of these results to the city council. Who will then be asked to reflect on the valuation and authorize continuation of the process.

- Present the proposal to the city council;
- When authorization is received, the process can continue to the next step, if not, the outcome of the previous step should be reconsidered.



STEP-BY-STEP PLAN

ACTORS

Step 6: Detailed assessment

By means of a comparison matrix in which the sub-criteria are identified, a detailed assessment of the preferred alternative can be done. The sub-criteria include: size, staff capabilities and experience, risk, timing, location within the city, liveability, urban masterplan, planning constrains, community participation, representativeness, historical and/or cultural value and partnerships.

- Value the sub-criteria in comparison matrix 2 (figure 5.2), together with the identified stakeholders;
- Evaluate and discuss the outcome;
- Reconsider objectives when there is no desirable outcome;
- Write a proposal for the preferred alternative based on the detailed assessment.

Real estate manager

Policy manager

Director department

Tenant

Market parties

Public

Step 7: Evaluation & Authorization

What was the outcome of the detailed assessment and what would that mean for the continuation of the project? Does the outcome correlate with the political context? This step regards the final evaluation of the results in the detailed comparison matrix and presentation of these results to the city council. Who will then be asked to reflect on the valuation and authorize one of the alternatives.

- Present the proposal to the city council;
- When authorization is received, the preparation phase can be initiated, if not, the outcome of the previous step should be reconsidered.

City council

Mayor and Aldermen

Preparation for execution selected alternative

Real estate manager

Policy manager

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
ELIGIBLE FUNCTION	Is there an indication of the function that could be accommodated in the object?	A	Yes, and the municipality has a legal obligation to accommodate the function;						
		B	Yes, the new function regards municipal office space;						
		C	Yes, the new function is supportive to municipal policies;						
		D	Yes, but the new function is not supportive to municipal policies;						
		E	No, the new function is not determined.						
MARKETABILITY	Would the market be willing to adapt the building?	A	The building is ambitiously marketable;						
		B	The building is reasonably marketable;						
		C	The building is positively marketable.						
	Would the market be willing to facilitate the function?	A	The function is ambitiously marketable;						
		B	The function is reasonably marketable;						
		C	The function is positively marketable.						
STRATEGIC PURPOSE	Does the object hold any future strategic purpose?	A	The object has a strategic purpose with regard to the function.						
		B	The object has a strategic purpose with regard to possible (re)development(s) of the area;						
		C	The object has a strategic purpose with regard to financial aspects. It is financially more attractive to hold on to the object (e.g. because of the current market, net operating income, long term objective);						
		D	The object has a strategic purpose with regard to the municipal portfolio. It provides flexibility in case of population growth or shrinkage;						
		E	There is no indication of any (future) strategic purpose.						
	Is ownership required?	A	Ownership is required;						
		B	Neutral;						
		C	Ownership is not required.						
MANAGEMENT STRATEGY	How much control and direction is intended to be taken?	A	The guiding strategy;						
		B	The congruent strategy;						
		C	The cooperative strategy;						
		D	The passive strategy.						
INITIATIVE	Was the process initiated by the municipality or by the market?	A	Yes, internal (municipal) initiative;						
		B	Yes, market initiative;						
		C	No internal or market initiative, process was triggered by obsolescence.						
BENEFIT / COST RATIO	Adaptive reuse of the object will result in a:	A	High social return;						
		B	Some social return;						
		C	Limited social return.						
	The expected net operating income after adaptive reuse will be:	A	Positive;						
		B	Neutral;						
		C	Negative.						

Figure 5 Comparison matrix 1 - Visual representation of the comparison matrix used in step 4, the initial exploration (Own ill.)

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
REPRESENTATIVENESS	The object has an image-determining, aesthetic value that holds a certain sense of representativeness for the city.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
HISTORICAL AND CULTURAL VALUE	The object has historical and/or cultural value that should be preserved.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
LIVEABILITY	The object and/or possible future function contributes to the liveability of the area.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
URBAN MASTERPLAN	Is the object located in an area described in the master plan?	A	The object is located in an area described in the urban masterplan or municipal vision. This has implications on the future of the building;						
		B	The object is located in an area described in the urban masterplan or municipal vision. However, this has no implications on the future of the building;						
		C	The object is not located in an area described in the urban masterplan or municipal vision.						
SIZE	The expected financial investment of the project is?	A	High;						
		B	Medium;						
		C	Low.						
COMPLEXITY	What is the expected complexity of the project?	A	High complexity;						
		B	Some complexity;						
		C	Low complexity.						
STAFF CAPABILITIES	What are the capabilities of the employees?	A	Sufficient employees and expertise available;						
		B	Sufficient employees available, but there is less expertise on the matter;						
		C	Sufficient expertise, but there are less employees available;						
		D	There is a minimum amount of expertise and employees available;						
		E	Expertise and/or staffing is available through an external advisor.						
TIMING	Would the adaptive reuse project fit within the current political context and departmental planning?	A	Yes;						
		B	No.						
PLANNING CONSTRAINTS	The current planning constraints are sufficient to ensure the preservation of the building.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
PARTNERSHIPS	Is there an opportunity for a partnership with a market party or other public organisation?	A	Yes;						
		B	No.						

Figure 6 Comparison matrix 2 - Visual representation of the comparison matrix used in step 6, the detailed assessment (Own ill.)

7. Conclusion

Based on the theoretical framework and the empirical research it was concluded that in principal there are four alternative solutions with regard to adaptive reuse within the municipal portfolio: (1) execution of the work by the municipality, (2) execution of the work by a third party, (3) disposal of the object with conditions of sale and (4) disposal of the object without conditions of sale.

The initial conclusion on adaptive reuse from the perspective of the municipality is that adaptive reuse, as a developing strategy, should not be part of the core tasks of the municipality. However, there are certain conditions under which adaptive reuse might still be considered, and situations in which the municipality has the tendency to take more control and give more direction to the outcome of the project. Deriving out of the findings from the theoretical and empirical research a set of key and sub-criteria could be identified. These criteria should be considered during the decision-making process.

Even though the perspective on adaptive reuse differs vastly per municipality. The developed tool provides the municipalities with a structured decision-making process, which can be used, to maximize transparency, stimulate critical thinking, optimize MREM and offer an initiator for discussion. With these findings, the municipality can take a leading role in the initiation of adaptive reuse. And they should take that leading role, because they are one of the actors within the built environment that is in the position to have a large influence on the urban context. They can act by executing adaptive reuse themselves or be more considered and conscious of what happens with the object when disposing of vacant real estate. The tool provides them with a process wherein considerations are well grounded and clear, giving them the opportunity to preserve value and stimulate sustainable (re)development within their municipality. While still focusing on their core tasks. All, in order to achieve a liveable community where strategic, functional and financial interests are well balanced and supportive to the public goals.

8. Recommendations

Based on the findings in this research, the recommendations for further research include:

- Validation and practical implementation of the model: As the tool described in this research concerns a concept model, further research should be conducted to test the use and implementation of the tool;
- Further study into the roles and involvement of stakeholders: The stakeholders that are involved to value these criteria have been identified, but what could be concluded from the empirical research is that roles of these stakeholders are constantly changing. Further analysis into the roles of the stakeholders would therefore be an interesting study, also when regarding the collaboration with the public;
- Research into measuring intangible values: In the findings, it became clear that for a public organisation, like the municipality, intangible values are as important in the process as tangible values. Defining intangible values however proved to be difficult and is often subjective. More research can be conducted to determine the intangible values and how they can be measured.

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CONTENT

Index

REPORT STRUCTURE

Reader's guide

The aim of this master thesis is to outline a new decision-making tool for the initiation phase of adaptive reuse within the municipal portfolio. To systematically achieve this aim and explain the findings, the research has been subdivided into seven chapters.

CHAPTER 1: INTRODUCTION
The first section introduces the topic of interest in this report by briefly setting the context and identifying the problem. It also includes an outline of the scientific and societal relevance of the research.

CHAPTER 2: METHODOLOGY
The second section draws the research design, where the problem statement is outlined, research questions are formulated and the method of research is developed. It also provides information about the research techniques employed, like the qualitative interviewing and expert meeting, and information about the graduation company.

CHAPTER 3: THEORETICAL FRAMEWORK
The third section explores the theoretical concepts. By examining and analysing existing literature on several topics a growing understanding of the situation is achieved. The findings of the literature study serve as input for the empirical research and contributes to the development of the decision-making model.

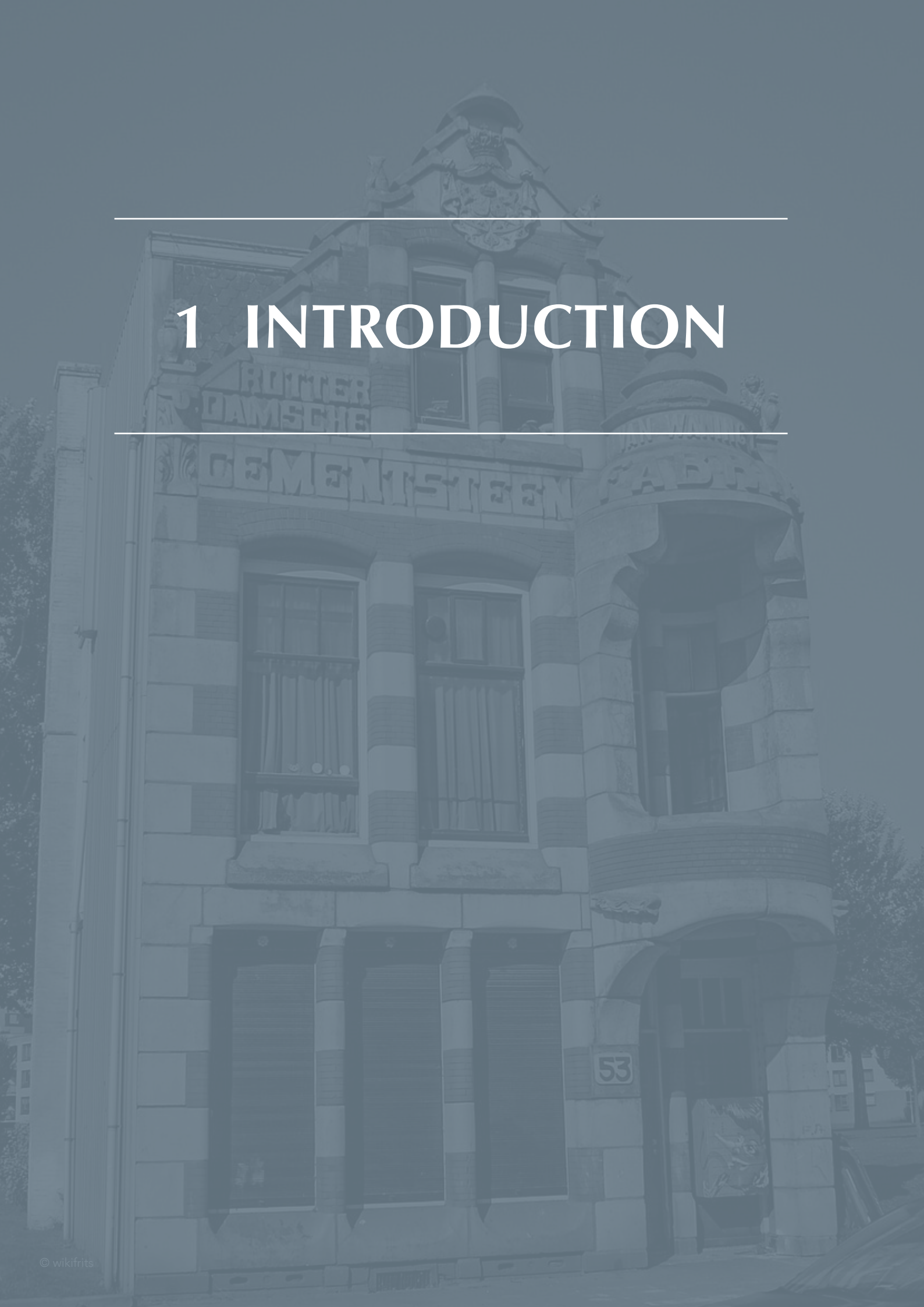
SECTION 4: EMPIRICAL RESEARCH
The fourth section includes the empirical research where data is collected through several qualitative interviews and an expert meeting. Which are then used to evaluate the findings from the theoretical framework. It also provides a more practical perspective on the research.

SECTION 5: FINDINGS
The fifth section of the report describes the main findings of the thesis and the decision-making tool which is the product of the research. The section provides a description of the tool and the user's guide, in addition to an outline of the development of the tool. Where all the elements of the tool, the decision context, decision alternatives and decision criteria are carefully introduced, described and reasoned.

SECTION 6: CONCLUSION
In the sixth section conclusions are drawn by answering the research questions and synthesizing findings from the theoretical framework and empirical research.

SECTION 7: RECOMMENDATIONS
The seventh section comprises of recommendations for further research.

1 INTRODUCTION



At the end of the nineties, the population was growing, the economy was booming and there were plenty of opportunities to finance new greenfield developments all over the Netherlands. However, in the last couple of years it has become clear that the way in which we can use, and are using our built environment has changed (Van der Groot, 2014). The economic crisis, demographic changes and increasing vacancy of real estate in the city urges us to question how we cope with the new needs and how these can be combined with what we already have. In 2013, the Chief Government Architect [Rijksbouwmeester] Frits van Dongen stated that the Netherlands is done building and that we have now entered a time in which reflection on the built environment is necessary (Van der Groot, 2014). Where adaptive reuse of buildings was for a long time seen as idealistic, unaffordable and therefore not achievable (Grootswagers, Linskens, & Helleman, 2013), it is now regarded as a new opportunity and an increasingly appealing option for the building sector in the Netherlands (Waltman, n.d.).

1.1 Adaptive reuse

The term adaptive reuse - also referred to as 'retrofitting', 'transformation', 'conversion', 'adaptation', 'rehabilitation' or 'refurbishment' – is characterised by a large amount of common definitions. According to Latham (2000) adaptive reuse involves "[…] converting a building to undertake a change of use required by new or existing owners." Bullen and Love (2011b) define the concept as "[…] the process that changes a disused or ineffective item into a new item that can be used for a different purpose". While Douglas (2006) adopts a more broader term for adaptive reuse by stating that adaptive reuse is "[…] any building work and intervention to change its capacity, function or performance to adjust, reuse or upgrade a building to suit new conditions or requirements.", as well as Wong (2016) who defines adaptive reuse as the "[…] reuse of pre-existing structures for new purposes". In the context of this research, the term adaptive reuse will be used for a broad array of interventions.

Even though the term of adaptive reuse is relatively new and only first noted in 1973, the practice has its roots in the history of monuments and policy for preservation of heritage (Wong, 2016). With global recognition of the considerable contribution adaptive reuse can make to sustainability (Bullen & Love, 2011a, 2011b, 2011c; Douglas, 2006; Latham, 2000; Mısırlısoy & Günçe, 2016; Strumiłło, 2016; Van Giezen, 2013; Wong, 2016), the practice of adaptive reuse has been placed in a primary position in the formulation of strategies for future-proof cities.

Adaptive reuse is however often not a clear-cut process and the successful implementation of adaptive reuse comes with several big challenges (Andriessen, 2007; Strumiłło, 2016). First, it is a more complex process than new development, because there is a considerable amount of tension between interests. Due to the fact that there is already a building with a fixed size, location and structure, there are simply less possibilities in transforming the building to the current demand. Moreover, there are more requirements that need to be considered. Such as more actors, more (safety and building) regulations, more work due to possibly a bad maintenance status and the measures needed are often more expensive than when developing a new prefab building (Douglas, 2006; Strange & Whitney, 2003). Second, the inability to estimate economic viability as well as environmental and social viability are also considered to be extra barriers compared to new development (Bullen & Love, 2011b). The projects are therefore often perceived as less controllable (Andriessen, 2007).

1.2 Adaptive reuse in municipal portfolio strategies

In the Netherlands, there has traditionally been a strong government involvement in spatial planning, but over time more and more responsibilities are transferred to the local governments (Van der Groot, 2014). This also applies to adaptive reuse and the role of the municipality within the initiation, execution and facilitation of adaptive reuse projects.

Municipalities, who own a reasonable amount of real estate in the Netherlands (Smolders, 2013; Tazelaar, Schonau, & Vos, 2012), slowly start to recognize that real estate cannot merely be managed and preserved by simply maintenance. Lots of buildings do not only portray a decreasing technical lifespan, but also a decline in their functional lifespan. Changing techniques and user requirements, demand significant adjustments in building characteristics (Grootswagers et al., 2013). Municipalities should act upon these changes and shift from merely monitoring annual maintenance to preservation by functional change to guarantee a prolongation of the building's lifespan (Haarmann, Dagevos, Tomor, & Janssen, 2015). In addition, adaptive reuse is placed in a broader perspective as a method for urban regeneration and economic development, especially in the context of cultural heritage (Delafons, 1997, cited in Strange & Whitney, 2003).

However, research argues that many municipal portfolio strategies lacks professionalism and efficiency (Smolders, 2013; Tazelaar et al., 2012; Van den Beemt-Tjeerdsma & Veuger, 2016; Veuger, 2013). Unclear proceedings, vague tasks and ad hoc decisions lead to inadequate results and generate resistance. In addition, the municipality as a public authority, not only has to consider their own objectives and financial viability, but also that of their city and residents. Herein they face even more challenges on a financial and economic level, on a political and organisational level but also on a societal level.

- *Financial and economic challenges:* The economic crisis of 2008 has confronted municipalities with disappointing income statements, decreasing their budget and financial availability (Tazelaar et al., 2012). The crisis led to several budget cuts and brought municipalities to re-examine their real estate portfolio, which is a considerable amount of their total budget (Smolders, 2013).

- *Political and organisational challenges:* The changing political "colour", elections every four years, influences policies as priorities might switch when a new political movement becomes more dominant. While the government does set up national policies regarding the preservation of cultural heritage, they also portray a political trend of retreating movements regarding the implementation of these policies (Haarmann et al., 2015; NPH, 2011). While the number of tasks for municipalities have increased, numbers have shown that in the last couple of years, many municipalities have seen their organisation shrink (Haarmann et al., 2015).

- *Societal challenges:* Municipalities are public organisations must consider broader societal goals, in contrast to corporate organisations, when restructuring their real estate portfolio, as they are dealing with public goods and finances. These societal goals regard the environmental, spatial and cultural quality of the city. Adaptive reuse has the potential to have a positive effect on the spatiality of the area, contribute to wider sustainable and environmental goals, and promote cultural development (NPH, 2011).

Adaptive reuse brings the municipality a dilemma. On the one hand, the municipality recognises that real estate (including their own) cannot merely be managed by simple maintenance. Moreover, adaptive reuse is an appealing option to sustainably re-boost an area. On the other hand, many municipalities do not have the capacity to deal with adaptive reuse in their real estate portfolio or can properly justify their decisions for choosing to deal with their real estate in another way.

1.3 Relevance

1.3.1 Scientific relevance

In previous studies, the factors, criteria and benefits that could indicate whether the building is suitable or unsuitable for adaptation have been widely researched and identified (Conejos, Langston, & Smith, 2011; Geraedts & Van der Voordt, 2002; Hek, Kamstra, & Geraedts, 2004; Langston, Wong, Hui, & Shen, 2008; Mısırlısoy & Günçe, 2016; Shen & Langston, 2010; Yung & Chan, 2012). However, the process, decision-making and stakeholder management of adaptive reuse have not been studied extensively. According to Bullen (2007, cited in Bullen & Love, 2011c, p. 33) practioners and owners "[…] lack a point of reference to justify and evaluate their decision." Langston (2012, p. 108) claims, in his article on validating the Adaptive Reuse Potential (ARP) model, that "[…] there is a need amongst the built environment professions for a transparent understanding of the goals of multiple stakeholders that underpin optimal decisions".

Furthermore, when looking at the topic of adaptive reuse within the public realm there are even less studies. Van den Beemt-Tjeerdsma and Veuger (2016) argue that in municipal real estate management overall, there has been little fundamental research. Even though public real estate is financed with public money and is therefore located in the middle of society. Duijn (2009, cited in Duijn, Rijnveld, & Hulst, 2010, p. 232) states that, especially in the context of complex projects, "[…] the public policy domain is often riddled with competency disputes between public policy actors, political conflicts, and ever-changing opinions of (societal) stakeholders that are amplified by the media". Duijn et al. (2010, p. 229) continue this notion by stating that for public managers, policy-makers and politicians to cope with the uncertainty, instability and uniqueness, they need to "[…] work in a more networked fashion, making more room for deliberation" and use reflective practice to understand the knowledge, beliefs, assumptions, actions and processes that influence the projects outcome.

Therefore, in this study the focus is on a decision-making process in a public setting to help a municipality with a difficult decision. On one hand, selling the object might seem like "the easy option", because one might argue that adaptive reuse is not a task for the municipality. On the other hand, selling results in the object disappearing from the public context, subsequently ensuing less opportunity for the municipality to use the building and its potential for their public goals.

Figure 1.1 Vila van Waning © E.T.C. Dee

1.3.2 Societal relevance

The lack of clear, concise and unambiguous policies for adaptive reuse within the municipal portfolio is not only acknowledged in literature, but the result also influences society. This becomes clear from the example of the "Vila van Waning". This national monument was built in 1898 and bought a century later by the municipality of Rotterdam in 1990. Due to a lack of maintenance since acquisition, the structural and architectural state degraded significantly. The municipality put the monument up for sale in September 2012 for the purpose of adaptive reuse to a cultural or catering function, but only recently, in January 2016, the news was reported that a potential sale would follow soon (Erfgoedstem, 2016; Top010.nl, 2012). For nearly 26 years, the property was badly maintained and mostly unused (Rijnmond, 2014). One can argue that the municipality was at a loss on how to deal with this project.

2 METHODOLOGY

2.1 Problem statement

Adaptive reuse is often not a clear-cut process and the successful implementation of adaptive reuse comes with several big challenges. The added complexity, due to tension between interests, more requirements, more actors, more uncertainty and more financial considerations while dealing with less opportunities related to form and structure, results in long trajectories that are almost always unique. As owner of a considerable amount of real estate, the municipality is one of the actors in the built environment that could initiate and facilitate the implementation of adaptive reuse. However, the extra challenges posed upon the municipality make it difficult to set up a process and initiate adaptive reuse, as it is unclear what the options and their implications are. Resulting in the tendency to fall back to opportunistic and pragmatic solutions or no solution at all. Moreover, as they face multiple responsibilities, it is arguable whether executing adaptive reuse, with all the involved risks and commitments, should be part of their task description at all.

2.2 Research question

What is needed is to provide the municipality with the means to make a fitted decision in the initiation phase. When they are faced with a redundant building which is adequate for adaptive reuse and wherein their decision can be properly justified to other departments within the municipality, but also to the public. This strategy is needed to speed up the process and not let the real estate deteriorate, decrease liveability or be an unnecessary extra cost on their balance sheet.

In general, one could argue that there are several alternative options. The most straightforward options would be: adaptive reuse by the municipality or adaptive reuse by the market. But deciding upon the best option for a specific situation is the difficult part. Especially when you need to find a solution that answers both to the organisational objectives as well as the public responsibilities. Therefore, the main research question is:

"What criteria need to be considered when deciding upon adaptive reuse within the real estate portfolio of municipalities?"

When researching the criteria that need to be considered it is also important to determine in what way the criteria can be used in the decision-making process in a structured and coherent manner.

To answer the research question, the following concepts have been studied to understand the decision at hand, but also the context in which the decision takes place.

Public management:	What is public management and what are current trends in public management?
Municipal organisation:	How is the municipality organised and which part of the municipality manages the real estate portfolio?
Municipal real estate management:	What is municipal real estate management and which strategies are currently implemented?
Adaptive reuse:	What is adaptive reuse and how is the process organised?
Structured decision-making:	What is structured decision-making and how can it be achieved?

2.3 Aim and intend of the research

With the real estate department of the municipality as the main target group, the aim of this thesis is to identify the criteria that need be considered in the decision regarding adaptive reuse. Herein it is also important to determine in what context the decision takes place and in what way the criteria can be used in the decision-making process.

The intend of this research is therefore to contribute to current issues raised by many municipalities regarding the efficiency of their portfolio management, but also to the increasing need for new strategies to cope with the preservation of existing buildings and the restoration of their value to society. The research attempts to provide the municipality with a tool to maximize transparency in the process, stimulate critical thinking, offer an initiator for discussion and contribute to the search for optimization of municipal real estate management.

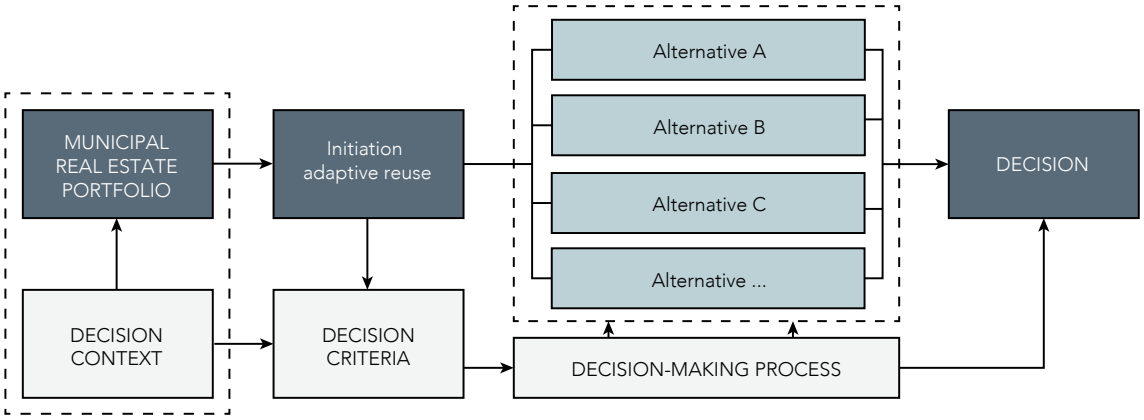


Figure 2.1 Conceptual framework (Own ill.)

2.4 Research design

The research design is based on the concept of qualitative research. According to Bryman (2016, p. 375), qualitative research can be defined as "[…] an inductive approach on the relationship between theory and research, whereby the former is generated out of the latter...the stress is on the understanding of the social world through an examination of the interpretation of that world by its participants". Foster (1995, cited in Bryman, 2016) gives an overview of the general steps taken within a qualitative research:

1. General research question(s);
2. Selection of relevant sites(s) and subjects;
3. Collection of relevant data;
4. Interpretation of data;
5. Conceptual and theoretical work;
    a. Tighter specification of the research question(s);
    b. Collection of further data;
6. Writing up findings.

Step one and two, describing the general research questions and selection of subjects, have already been discussed in paragraph 2.2. The remaining steps will be used as a guide for the following paragraphs.

2.4.1 Collection of data

To devise a solution for the problem statement and give answer to the research question, several research methods have been used for the collection of data, including a literature study, qualitative interviews and an expert meeting.

Literature study
The start of the research was characterised by the collection and analyses of literature to formulate the theoretical framework. This regarded literature in the subjects of adaptive reuse, public management, municipal organisation, municipal real estate strategies and structured decision-making. These subjects were studied in order to capture information about the context in which the decision-making of adaptive reuse takes place. Actions, beliefs, experiences and objectives are studied to consider the viability of adaptive reuse.

Qualitative interviews
More in-depth views from practice were obtained through semi-structured interviews. This type of data collection was chosen as primary mechanism, because it is an effective tool for learning about practical implementations of current actions and beliefs (Bryman, 2016). From the client database of ICSadviseurs, twenty municipalities where selected based on two criteria: (1) size of the municipality, and (2) short term availability of an employee of the real estate department. Of the twenty municipalities contacted, twelve employees agreed to participate in the research. The exact sampling method will be discussed in chapter 4.1 and a list of interviewees, including the summaries of these interviews, can be found in the appendix. Prior to each interview the interviewees were informed about the cause and the purpose of the research, in addition to the topics of the conversation. Further reference to the interviewees and related municipalities have been anonymized. The full transcripts and recipient details are for similar reasons not included.

Expert meeting
An expert meeting was organized to discuss initial results from the literature study and validate the preliminary findings of the qualitative interviews. While comparing perspectives from the municipal organisation with that of the external advisor. The latter moving between different municipal organisations and therefore being able to recognise different contexts.

2.4.2 Interpretation of data and conceptualisation

Interpretation of the data is largely based on analysis, personal interpretation and discussions with the mentors, fellow students and employees of ICSadviseurs. To get a more concise result, the semi-structured interviews are employed to get a more in-practice perspective. The criteria noted in the interviews are placed within a data collection model, showing the relative importance of each of the criteria.

2.4.3 Conceptual and theoretical work

The concepts described in the conceptual framework visualised in figure 2.1, which are based on the described concepts of the research questions, are the starting point for further data collection. Figure 2.2 shows the visualised overview of the research design and methods to be used, as well as the phasing of all activities.

2.4.4 Findings

The described research proposal put forward a research that relates to the research programme of the master track 'Management in the Built Environment' as it analyses current real estate portfolio practices in public organisations and seeks to find solutions for issues occurring in the process of adaptive reuse.

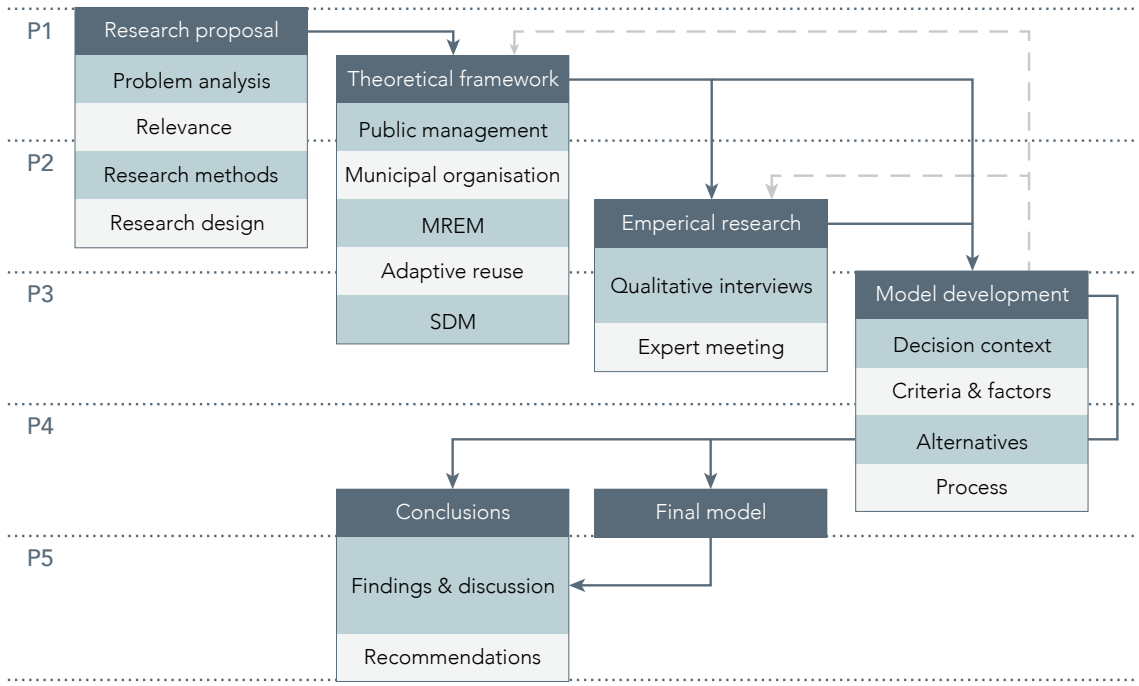


Figure 2.2 Research design (Own ill.)

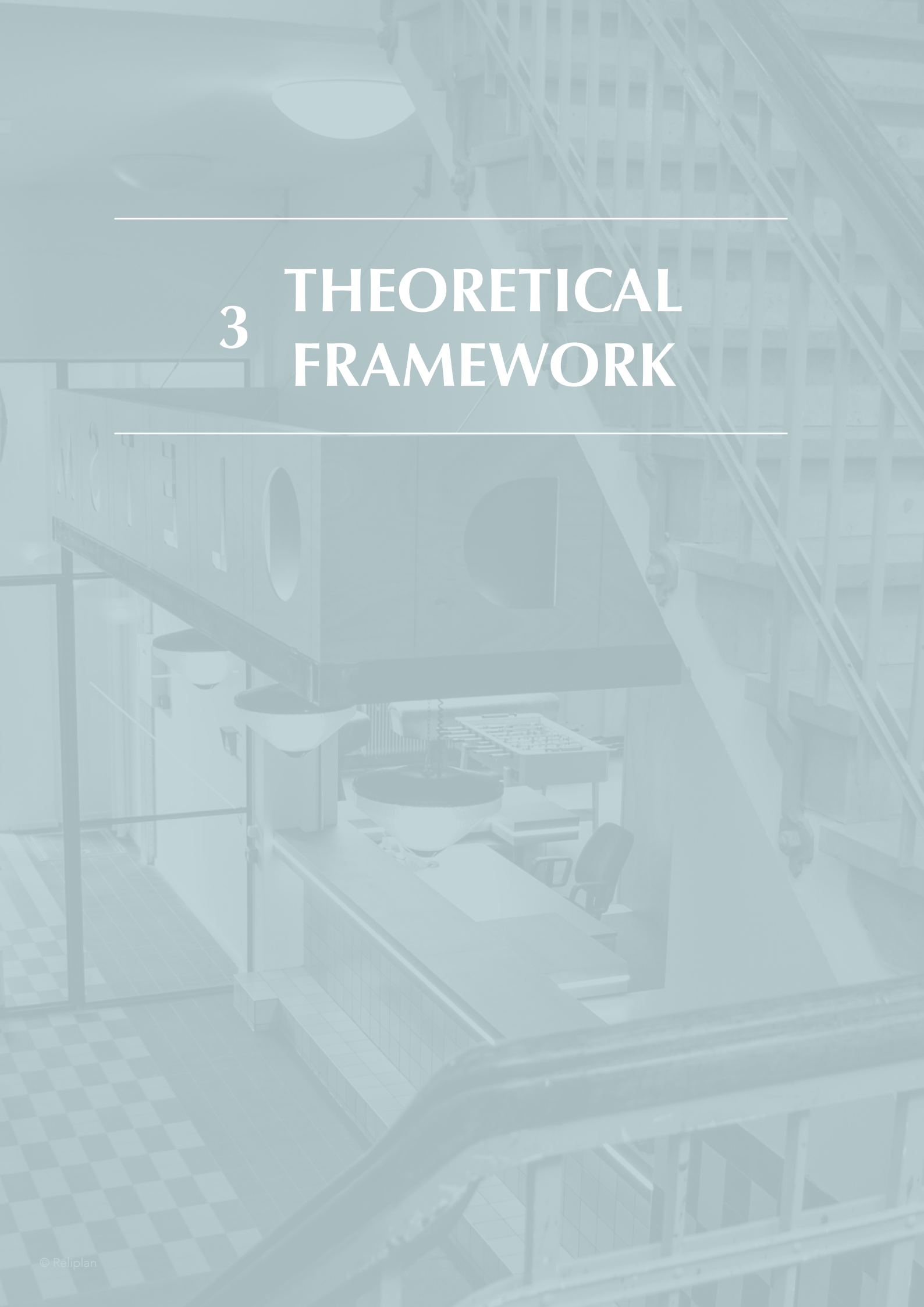
2.5 Graduation company

ICSadviseurs is a consultancy agency working at the interface of organization and housing within the domain of social real estate. They were founded in 1955 with the aim of providing advice for educational institutions, about new innovative insights and improved standards to deal with the increasing number of students and decreasing technical and functional performance of the educational buildings. Over the years, they have developed into an agency with a wide spectrum of clients and projects.

The consultants and construction managers operate throughout the whole development cycle, from initiative and design up until the exploitation. Their knowledge and expertise has been categorised into three operating fields. These include: accommodation planning and real estate strategy [voorzieningenplanning en vastgoedstrategie], organisation and space [organisatie en ruimte] and thirdly real estate development [vastgoedontwikkeling]. Their client list includes educational institutions, municipalities and healthcare institutions, for which they develop integrated and sustainable solutions for social building projects.

During my internship at ICSadviseurs I was being mentored by Maarten Groenen, consultant accommodation planning and real estate strategy. The main reason for me to do this internship was to connect theory with practice and broaden my perspective on the problem statement. In addition, I could use the network of contacts from ICSadviseurs to arrange interviews with different municipalities and invite experts to the expert meeting. Moreover, are the employees of ICSadviseurs more than willing to discuss and evaluate findings based on their knowledge from practice.

3 THEORETICAL FRAMEWORK



3.1 Public management

This chapter describes public management strategies and how public management has taken shape in the Netherlands. These theories help to understand the context in which the decision-making of municipal real estate management takes place.

3.1.1 Public management strategies

Public management can be defined as "the study of government, its structures, processes and functions, and the manner in which society is managed" (Maserumule, n.d.). Where policy-making is one part of the process in serving public needs, management and implementation strategies are the second crucial element in realising policy intentions. Emerging in the 1980s and 1990s as a new approach to public administration, the public management ideas brought about several changes in governmental management strategies (Hughes, 2012; Van den Dool, Van Hulst, & Schaap, 2010).

1. Greater attention was to be paid to achieving results and managerial responsibility;
2. Classic bureaucracy was to make place for more flexible organizations, personnel, and employment conditions;
3. Both organizational and personal objectives need to be measurable through clear performance indicators;
4. Systematic evaluation is needed to see if government programmes function as intended;
5. Government involvement no longer should be only through bureaucratic means;
6. Privatization and reduction of government functions is a trend towards new models of market contracting.

Theory in public management is often compared to corporate or private management, but there are several major differences that contribute to the fact that choosing a management strategy in governmental proceedings is a much more delicate process. Accountability strings, agendas, efficiency measurement and size of the sector all form major differences between the two (Hughes, 2012). In public management one does not only need to maintain management effectiveness, but also properly balance this with the functioning of the local democracy (Hilb, 2006; Van den Dool et al., 2010).

Government involvement, within the spectrum of public management, can take several forms. Woldendorp and Keman (2007, pp. 338-339) describe four strategies of government involvement based on the amount of intervention in public affairs. Ranging from a passive approach, referred to as the passive strategy, to a controlling active approach, referred to as the guiding strategy. Hilb (2006) describes a similar concept with four quadrants on two axes. The vertical axes portraying the amount of direction given and the horizontal axes the amount of control. Both theories show similarities and could therefore be combined into one over with the following four strategies placed on the axes of direction and control.

The passive strategy
With a focus on administration, the government remains passive and abstains from any intervention in the negotiations between government and the (recognised) social partners.

The cooperative strategy
With a focus on supervision, intervention in this strategy is restricted to the facilitation of negotiations between government and the (recognised) social partners. The government does not intervene in the outcome of the negotiations, or does not go against the trend of the outcome.

The congruent strategy
With a focus on entrepreneurship, active intervention is sought with its own policy proposals in the negotiations between government and the (recognised) social partners. Interventions are aimed at facilitating agreement by formulating a policy package that can potentially accommodate all. The government may intervene in the outcome of the negotiations with its own policy proposals.

The guiding strategy
With a focus on total direction and control, this strategy stipulates a governmental management strategy that puts its own agenda first. (recognised) Social partners are compelled to accept the government's agenda as the basis for policy. The government basically implements its own policy without much regard for the agendas of the 'social partners' or the outcomes of the negotiations.

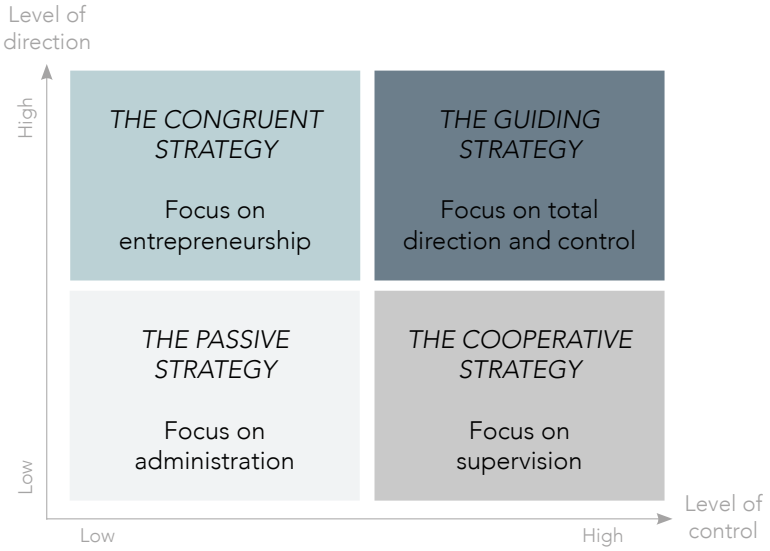


Figure 3.1 Government involvement

Based on the concepts of Hilb (2006) and Woldendorp and Keman (2007) the figure shows the four strategies placed on the vertical and horizontal axes of level of direction and control

Each of these strategies have a direct influence on the course of action taken during a decision-making process. Determining what type of organisation it regards, and how active they wish to be in their management proceedings is crucial in the decision-making process.

3.1.2 Public management in the Netherlands

Local government policies and management strategies have seen considerable discussion in the Netherlands as well. Which contributes to the notion made in the previous paragraph regarding the challenge of finding a balance between management effectiveness and political influence. In more recent years, especially when the financial crisis of 2008 put constraints on available budgets, questions were raised about the efficiency and effectiveness of municipal operations. But that was not the first time those questions were raised. Hendriks and Tops (1999) described similar debates in the 1980s when radical cutbacks formed a stimulus for reorientation of local governmental affairs. Assumptions were made that there was a lack of 'market discipline' and the concept of New Public Management (NPM) was introduced.

New Public Management
This concept, which first emerged in the United Kingdom, has its origins in public-choice theory and managerialism. It was based around several basic developments in which the municipality was to be reconceptualised as a type of 'holding', with 'less state' and 'more market' by emphasising on entrepreneurship and risk reduction (De Boer, Enders, & Schimank,

2007; Gruening, 2001; Hendriks & Tops, 1999). Showing much resemblance to the congruent strategy for government involvement. Gruening (2001, p. 3) notes that 'the reformers expected public managers, working within organizational structures, to perform the following functions: Planning, Organizing, Staffing, Directing, Coordinating, Reporting and Budgeting – or, Luther Gulick's shorthand: POS-DCORRB'. This led to the development of new sets of management and steering instruments to incorporate measurable policy objectives and benchmarking. Table 3.1 gives an overview of the undisputed characteristics, as listed by Gruening (2001), that were later mentioned by academic observers as being common attributes of NPM.

Undisputed characteristics (identified by most observers)	Debatable attributes (identified by some, but not all, observers)
Budget cuts	Legal, budget, and spending constraints
Vouchers	Rationalization of jurisdictions
Accountability for performance	Policy analysis and evaluation
Performance auditing	Improved regulation
Privatization	Democratization and citizen participation
Customers (one-stop shops, case management)	Rationalization/streamlining of admin.
Decentralization	structures
Strategic planning and management	
Separation of provision and production	
Competition	
Performance measurement	
Changed management style	
Contracting out	
Freedom to manage (flexibility)	
Improved accounting	
Personnel management (incentives)	
User charges	
Separation of politics and administration	
Improved financial management	
More use of information technology	

Table 3.1 Characteristics of New Public Management - Identification of the characteristics of NPM based on the research by Gruening (2001)

Dutch polder model

The concept of the NPM however also received criticism. At the end of the 1990s, some opted that the 'corporate' focus was overdone and interests of residents were given little attention. Gruening (2001, p. 9) outlines the critique, that was placed on the NPM in numerous countries, as opposing the basic idea that: "[…] human beings are political beings and that they can only be fully human when they have the possibility to participate in political life". This stimulated the implementation of new participation procedures in which residents were given the option to take part in discussions during decision-making processes (Hendriks & Tops, 1999). 'Interactive policy-making' and 'participative decision making' were the buzz phrases that characterised the period after the NPM (Hendriks & Tops, 2003) and shows a shift in management towards a more cooperative strategy. Interactions on municipal procedures were sought on various levels. They organised consultation meetings, platform-of-support conferences, policy studios, scenario workshops, invitation-to-coffee sessions, and so on. Hendriks and Tops (2003) remark that the refitted concept of interactive policy-making fitted quite well with the Dutch administrative tradition of consensus, consultation and compromise, also known as the 'polder model', and was a strong counterpart to the three E's (Economy, Efficiency and Effectiveness) of the NPM.

Collaborative public management

Where an economic recession in the 1980s and subsequent budget deficits brought about a quick implementation of the NPM. An increasing Dutch economy in the 1990s, shifted attention back from the financial perspective to the more interactive policy-making theory based on the traditional Dutch political culture of the polder model (Hendriks & Tops, 2003). One can now see a new trend that has been developing since the start of the 21th century. According to John (2001, cited in Van den Dool et al., 2010, p. 551), local governments are experiencing a loss of autonomy and capability for independent problem solving.

Agranoff and McGuire (2004) continue this notion by arguing that public functions are in fact no longer exclusively government domain. Actors from various public authorities, as well as local individuals and private organisations intervene in the policy and decision-making, seeking co-production of public management, or collaborative public management. At the same time, local authorities are requested to account for their performance and measure their capacity (Van den Dool et al., 2010). Difficult financial times, during the economic crisis, and more involvement from society has let, according to Van den Dool et al. (2010) to at least five dilemmas in performance assessment. On the one hand there is uniformity, but on the other hand local context. One seeks effectiveness, while keeping legitimacy. There is self-evaluation versus external assessment. An internal focus as well as an external focus. And finally, there is regular measurement versus measurement when needed.

Uniformity	vs.	Local context
Effectiveness	vs.	Legitimacy
Self-evaluation	vs.	External assessment
Internal focus	vs.	External focus
Regular measurement	vs.	Measurement when needed

Table 3.2 Five dilemmas in performance measurement - Difficult financial times and more societal involvement have let to five dilemmas (Van den Dool et al., 2010)

3.1.3 Conclusion

What can be concluded is that the concept of public management as the study of government involvement, its structures, processes, functions and societal management has seen clear developments in the Dutch context as well. When in the 1980s radical cutbacks formed a stimulus for reorientation of local government affairs. The assumption that the management strategies lacked market discipline let to the introduction of New Public Management. The concept of the NPM however also received criticism and at the end of the 1990s, some opted that the 'corporate' focus was overdone and interests of residents were given little attention. Interactive policy-making and participative decision making became the buzz phrases of those times. Now, in the 21st century one can see a new trend that influences governmental proceedings. It is argued that public functions are no longer exclusively government domain. Actors from various public authorities intervene in the policy and decision-making, seeking co-production of public management. While at the same governmental bodies are nonetheless being requested to account for their performance and capacity. The municipality, as local government, faces multiple dilemmas that increase the difficulty in decision-making regarding governmental proceedings.

3.2 Municipal organisation

This chapter describes the municipal organisation in the Netherlands. The overview of organisational structures and introduction to the proceedings of the municipal real estate department contribute, like the previous chapter, to understanding the context in the which the decision-making of municipal real estate management takes place.

3.2.1 Organisational structure

The basis of governmental proceedings in the Netherlands can be characterized by the concept of the decentralized unitary state, consisting of three active organs of state; the central government, the provincial government and the local government. Organisational structures of the local government in the Netherlands are still largely based on the Municipal Act of 1851 (F. Hendriks & Tops, 1999). The Municipal Act stipulates the rules for the governing bodies of the municipality, which include the council and the board of Mayor and Aldermen (M&A).

The city council is the highest power in the municipality and is directly elected by the residents of the municipality and represents the residents for a term of four years. They are the controlling organ of the municipality. Each year, budgets for each of the municipal affairs are decided upon by the council and they therefore take the lead in the municipality. The board of M&A represent the executive organ. They regulate and administer internal affairs. The Aldermen are elected by the city council and each represent a certain section of municipal affairs. They are, like the city council, appointed for a term of four years. The Mayor on the other hand is appointed for a term of six years by royal decree with the recommendations of the city council. All decisions by the council are prepared and implemented by the managing organ, the municipal civil service (Government of the Netherlands, n.d.; Van den Noort, 2011). Further departmental structure differs vastly per municipality. Each having chosen their own model and implementation. Models currently used include: the 'secretarial' model [secretariemodel], the 'sector' model [sectorenmodel], and the 'tilted sector' model [gekantelde directiemodel] (Aardema & Korsten, 2009; Boelens, 2013). Aardema and Korsten (2009) describe each of the models in the following way:

Secretarial model

The secretarial model was the most common model in the 80s, but is still used in some municipalities. Basically, the municipal secretary is the connecting factor between the board of M&A and the rest of the municipal organisation. Smaller departments do the executive work, but policies are developed and monitored by the secretary. One of the main disadvantages is that advice given by one of the executive departments does in principle have to be approved by the secretary, but in practice this was often not the case. Consequently, leading up to a sort of competition between the secretary and the service organisations and conflicting recommendations for the board of M&A.

Sector model

The sector model was introduced in the 90s, mostly because of several disadvantages of the secretary model. The main difference with the secretary model is that policies are no longer written by the secretary department, but are subdivided in sectors per policy area. In most cases the municipality would cluster policies under the sector "space" or "territory", the sector "social services" and a sector in which different means and resources are bundled. Moreover, every sector has its own division in departments, with several managers, for the execution of work. The implementation of this model coincided with the change in public management strategy to a more business-like perspective (NPM), as was discussed in the previous chapter. One of the main disadvantages of the sector model is the 'compartmentalisation'. With all the directors of the sectors having the idea that they need to negotiate with each other, to achieve the best result on their own plans. Instead of working together to achieve joint objectives.

Tilted sector model

The tilted sector model is a new structure that some municipalities have taken on in the last couple of years. Basically, the service model is tilted by which the division in policy-specific sectors is released and the structure is divided into a policy department, an external department, front-office and back-office. Each of the policy areas are combined and represented in all the departments. Resulting in more centralised and integral decisions. The secretary has also been replaced by a full managing board. One of the main disadvantages is however that the change from the service model to the tilted sector model is not an easy process. In practice, it has shown that former directors, managers and employees find it difficult to change executive processes, as they have become "expert" in their own sector and are now required to know everything. Small teams, based around a specific topic, will inevitably emerge.

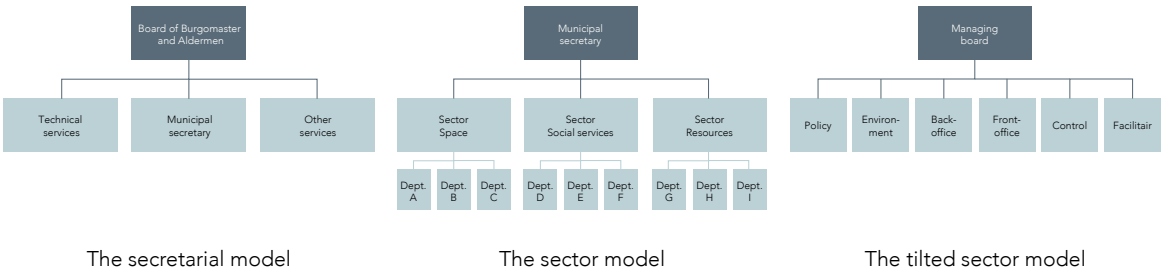


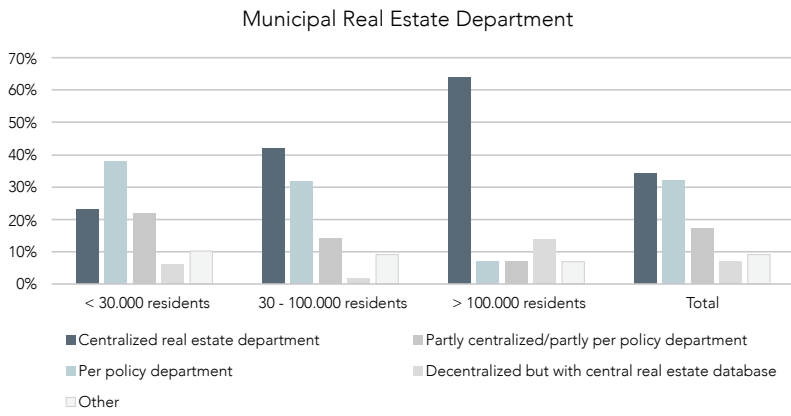
Figure 3.2 Municipal organogram - Overview of the different models for municipal organisation (own ill. based on Aardema and Korsten (2009))

3.2.2 Municipal real estate department

The wide variety of models and organisational structures also has considerable influence on the organisation and administration of municipal real estate. In the secretary model, there is often no explicit real estate department, while in the (tilted) sector model there might be a real estate department that operates as a separate organisation shifting between policy areas. In a research conducted, a couple years ago, by Smolders (2013), they noted that only half of the municipalities (that participated in the research) work with a central real estate department. Other municipalities worked e.g. with decentralized real estate departments per policy section, a combination of centralized and decentralized real estate departments or employed other organisational structures.

Figure 3.3 Municipal real estate department

Organisational structures of Dutch municipal real estate departments (Smolders, 2013)

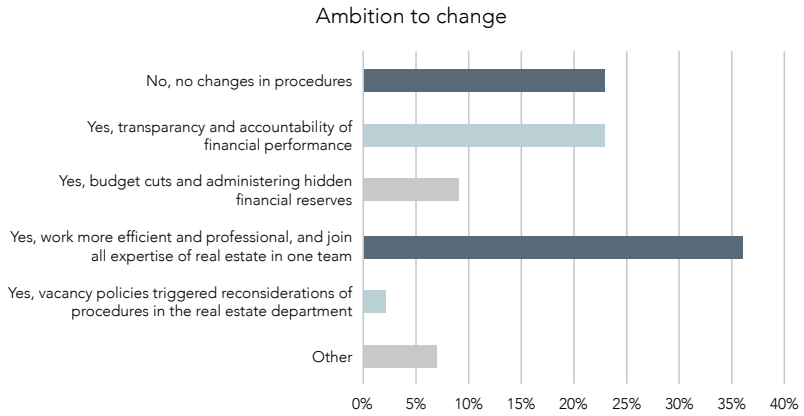


Furthermore, the conclusion of the research continued stating that a remarkable 49% of the respondents did not have a real estate strategy. In fact, research shows that a focus on real estate management has not always been evident. Zijlstra and Apperloo (cited in De Graaf,

2011) point out that about twenty years ago municipalities were hardly employed in real estate management. Only in the last ten years have they seen a more serious approach towards portfolio management, especially in municipalities with more than a hundred thousand residents. Reconsidering procedures for the use of municipal real estate is partly a result from for instance the financial crisis. Disappointing income statements have increased interests among city council members regarding the value and the use of their real estate (Tazelaar et al., 2012). Another reason is the new trend in many of the municipal organisations in which they put forward their wish for optimization, efficiency and risk control in the municipal real estate portfolio. In order to achieve more professionalism in public real estate management (bbnadviseurs, 2015; De Graaf, 2011).

Figure 3.4 Ambition to change

Ambition to change procedures within Dutch municipal real estate departments (Smolders, 2013)



Many of the municipalities did therefore indicate that there is the intention to change procedures within the municipality. 75% of the respondents remarked that there are developments in changing these existing processes. The main motive given was that more efficiency and professionalism needs to be achieved (Smolders, 2013).

3.2.3 Conclusion

The municipal organisational structure in the Netherlands is largely based on the Municipal Act of 1851. The Act stipulated the rules for the governing bodies of the municipality, which include the city council, the board of M&A and the municipal civil service. The city council is the highest power, directly elected by the residents and is the controlling organ of the municipality. They decide on the budgets and overall governance. The board of M&A is part of the executive organ, they are appointed by the city council with the task of regulating and administering internal affairs. The other part of the executive organ is the municipal civil service. All the decisions made by either the city council or board of M&A are prepared and implemented by municipal civil service. Further departmental structure differs vastly per municipality. The three generic models currently used include the secretarial model, the sector model and the tilted sector model.

The size and structure of the real estate department varies per municipality as well. Smolders (2013) noted in their research that only half of the municipalities had centralised their real estate into one department, and 49% of the respondents did not have a formal real estate strategy. Nonetheless interest in real estate management has grown considerable in the last ten years. Disappointing income statements and the trend to optimize efficiency and risk control, has let to a more serious approach to portfolio management.

3.3 Municipal real estate management

This chapter describes municipal real estate management. Starting with a definition of municipal real estate, the chapter continues by exploring municipal real estate management theories as well as corporate real estate management theories in order to understand in what way municipal real estate management has learned, and is still learning, from corporate real estate management. Followed by a short overview of current trends in the municipal real estate sector. This section also outlines three generic real estate strategies and explores adaptive reuse as real estate strategy, in which the main criteria in the decision-making process are identified.

3.3.1 Municipal real estate

Municipal real estate is often associated with public real estate, but since there is quite some discussion about the two, and many municipalities use their own definition and categorisation, the categorisation by Mac Gillavry (2006) will be used in this research. He classifies municipal real estate into the following categories:

1. Accommodation for policy support;
    i. *Long term: cultural, economic, traffic and transport, welfare, sport and education.*
    ii. *Short term: for (re)development purposes and liveability.*
2. Accommodation for external processes;
    i. *Spatial development.*
3. Accommodation for internal processes;
    i. *Office space for municipal employees.*
4. Other.

In principle, the municipality is only legally obliged to provide accommodation for education. Educational legislation states that the municipality should provide adequate housing for primary, special and secondary education. Nevertheless, one sees that they often own a considerable amount of real estate, which accounts for a large portion of their financial cash flow. Teuben, Waldmann, and Hordijk (2007) wrote in their paper for the ERES 2007 conference that the estimated market value for the total floor space of 40 - 47 million square meter that is owned by municipalities would be approximately € 30 billion. A value that is comparable to the total investment sum of all private investors in the Netherlands. In 2013, Smolders (2013) showed similar figures when he estimated the total value of municipal real estate to about € 33 billion, with an average municipality holding a real estate portfolio of about € 60 - 70 million. The large size of municipal real estate portfolio is partly due to historic trends of acquiring objects, but often also because they have invested in real estate that would not be invested in by the private market. Certain objects that are not particularly high in liquidity (Teuben et al., 2007), but are of great value to the societal system.

3.3.2 Municipal real estate management

Real estate management can be defined as the managing of a portfolio of assets used for investment purposes (Ali, 2006, cited in Borst, 2014). Management of the real estate portfolio (MREP) is required to ensure efficiency and maximise value for the investor. MREP includes acquisition, holding, (re)structuring and disposal of real estate.

In literature, a lot is written about the discipline of corporate real estate management (CREM). Which can be defined as "[…] the range of activities undertaken to aligning corporate real estate to the needs of the core business, in order to obtain maximum added value for the

business and to contribute optimally to the overall performance of the corporation" (De Vries, De Jonge, & Van der Voordt, 2008, p. 209). In basic terms, investors of CREM therefore hold either one of the following two objectives (Geltner, Miller, Clayton, & Eichholtz, 2001):

1. The growth (savings) objective, with a relatively long time horizon;
2. The income (current cash flow) objective, with a short-term ongoing need to generate cash.

When comparing CREM to the municipal organisation, this is where the biggest difference between public and private comes into place. Where in CREM, mostly for-profit organisations, the main objective is essentially to maximise profit, for municipalities, as being non-profit organisations, there is more to it. They have another objective, namely to optimise social and political outcome (Evers, Van der Schaaf, & Dewulf, 2002). In addition, the municipality does not only own property for their own use, but also owns objects to accommodate public organisations, like schools, theatres and health care. It is therefore that according to Van den Beemt-Tjeerdsma and Veuger (2016, p. 135) municipal real estate management (MREM) can be defined as "[…] the management of a municipal's real estate portfolio by aligning the portfolio and the services to the needs of the municipal organisation as well as the governmental or municipal policy goals, to balance strategic, functional and financial interests and to contribute optimally to a liveable community".

Key topics to manage CRE	CREM lessons applied to Dutch municipalities
Direction	Real esate can contribute to the municipal's social objectives A policy-specific approach to creating value from real estate management makes a greater contribution to the municipal's objectives Becoming more flexible in the static nature of real estate and the speed at which society develops can be addressed by consciously thinking about the longer term. Decisions need to be taken in this regard that create opportunities for future optimisation A target-focussed municipality provides more consistent reason for real estate interventions
Operations	Real estate interventions and effects reinforce the municipal's and policy's objectives One of CREM's jobs is to formulate and implement and optimum solution Cause-effect chains are unclear due to influences by several factors and performances are formed by complex end-means chains Real estate interventions depend on starting position and policy choices, in which context is subject to change
Organisation	Making the added value measurable is essential for the role as a real estate discussion partner in a municipal in which policy decisions are made MREM plays an important role in creating a sound financial situation Effects follow different eventualities and depend on the municipal's starting position and culture Collaboration is necessary to achieve social results, in which one monopolstic arrangement cannot deliver the benefit of values. Politics has its own dynamics and interests that can cause rational considerations to disappear into thin air

Table 3.3 CREM applied to Dutch municipalities - Lessons to learn from corporate real estate management (Van den Beemt-Tjeerdsma & Veuger, 2016)

Development of MREM by examining common areas of expertise with CREM has received a growing interest, especially after the start of the economic crisis in 2008 (Evers et al., 2002; Van den Beemt-Tjeerdsma & Veuger, 2016). When governments saw a loss of capital and where forced to make budget cuts, driving them to search for a more economically responsible manner. Veuger (2014) researched how other disciplines could learn from CREM. These lessons, shown in table 3.3, were later on combined by Van den Beemt-Tjeerdsma and Veuger (2016, p. 136), and formulated specifically when applied by Dutch municipalities.

3.3.3 Trends in the municipal real estate sector

In chapter 3.1, several trends in public management were identified, including the decentralization of policies and regulation, an increasing involvement of the public, focus on performance and the need to reduce expenditures. There are however also various trends that influence specifically MREM. Zijlstra and Apperloo (cited in De Graaf, 2011) point out a few trends, including the changing of roles, cooperation with both internal as well as external parties, the use of projects with profit to cover costs of other projects, a search for flexibility in development, the debate on core tasks of the real estate department and last but not least, the wish to incorporate sustainability in procedures.

These trends have an influence on the context of the decision-making process, as it effects the organisational structure and management perspective, and therefore should be considered during the development of the structured decision-making model.

3.3.4 Obsolescence

In principle, buildings are used for several years, but due to contextual changes the building can become inappropriate for its orginal purpose. When this happens the building will become obsolete or redundant, which triggers a need for change. Either by demolition to make way for new construction or some form of adaptive reuse (Langston et al., 2008). According to Langston et al. (2008), there are six types of obsolescence:

- Physical obsolescence: when physical performance is reduced at an accelerated rate;
- Economic obsolescence: when the object is no longer the best fit for the organisational objectives;
- Functional obsolescence: when requirements of the user(s) need do not comply with the current functional performance;
- Technological obsolescence: when operating costs are high and technologic elements are no longer superior to other alternatives;
- Social obsolescence: when changes in society can cause the need for an adjustment;
- Legal obsolescence: when revised regulations, building ordinances or environmental control require modification or substitution.

3.3.5 Municipal real estate strategies

As explained in the previous paragraphs, portfolio management can generally be defined as the management of acquisitions, holding of property, disposal of property and the (re)structuring of the portfolio. In which (re)structuring of the portfolio can be regarded as managing the process in which objects move from one of the actions to another. Facing an issue of obsolescence or redundancy could potentially be a trigger for restructuring. Adaptive reuse is herein a possible solution to cope with the problem within the existing portfolio, but one could also choose to move the object from holding to disposal and leave the task up to the market.

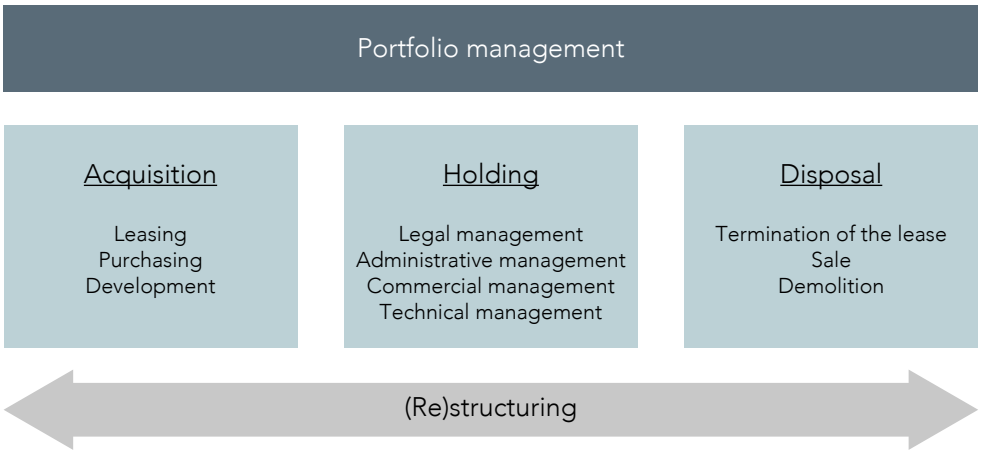


Figure 3.5 Portfolio management - Visual representation of the basic portfolio management strategies in MREM (Vastgoedbedrijf Zoetermeer, 2013)

Strategies are needed for each of these "actions" as random implementation of decisions will most likely not result in a favourable situation regarding the municipal objectives. In literature, three generic strategies are described for real estate management. These strategies, as defined by O'Mara (1999, cited in Van den Beemt-Tjeerdsma & Veuger, 2016), are categorised according to the perspective on organisational action, either being symbolic or rational, and the level of uncertainty. Resulting in the following strategies: an incremental strategy, a standardisation strategy and a value-based strategy (De Jonge et al., 2009).

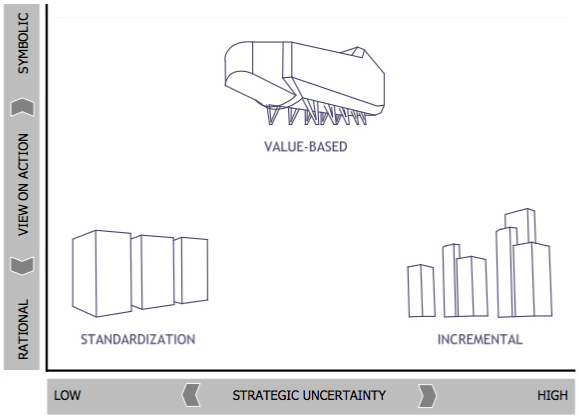


Figure 3.6 Generic real estate strategies

Visual representation of the generic real estate strategies and context analysis based on research by O'Mara, 1999, visualised by Singer, 2005 (De Jonge et al., 2009)

Incremental strategy
The increment strategy is a response when dealing with a highly uncertain environment. In most cases, there has been no opportunity or the company was unwilling to forecast future needs. The strategy is characterised by short term action with low commitment, when there is an absolute critical and acute need for change.

Standardisation strategy
The standardisation strategy is selected when attempting to coordinate and control real estate management across the entire organisation. Administrative processes are standardized to control allocation, development and administration of real estate objects. Decision-making based on a standardized strategy is often a result from being confident in the predictions of future needs.

Value-based strategy
The value-based strategy is mainly used when organisational values, vision and strategic direction are important in the decision-making process. Place is often an important aspect of the strategy, as the environment provides value in non-economic terms as well. Values are symbolised and in order to move forward, the value-based strategy is used to enhance the organisations culture as one of the focal points, while mediating between incremental and standardised solutions when needed.

Van den Beemt-Tjeerdsma and Veuger (2016, p. 135) argue that the value-based strategy is the most appropriate strategy for municipalities, because "[…] they face strategic uncertainty and because they strive to optimize social outcomes and added value for their community. The value-based approach takes into account the relationship between the organisation and its customers, its employees and society." Looking at practices in MREM I do however doubt to whether the value-based strategy is currently employed by municipalities. Many of the current developments involve standardisation of the process and policies. Centralisation of the real estate being one of the results. They are striving towards control of administrative processes, which is necessary, because most of the administrative work was inadequate, but the danger in that is that MREM because to standardised. While they should strive to maintain and reinforce those real estate objects that bring about more than economic values. In addition, standardisation of the process is sensitive to discussion, because changes in the future might decrease the use of standardised processes. This is especially true when looking at the municipal context, which is often less predictable, due to a broad variety of contextual influences, and subject to change.

3.3.6 Conclusion

In principle, the municipality is only legally obliged to provide accommodation for education. Nevertheless, they often own a considerable amount of real estate, which be classified into four categories: accommodation for policy support, accommodation for external processes, accommodation for internal processes and other.

Where in CREM, mostly for-profit organisations, the main objective is essentially to maximise profit, for municipalities, as being non-profit organisations, there is more to it. They have another objective, namely to optimise social and political outcome. MREM is therefore defined by Van den Beemt-Tjeerdsma and Veuger (2016, p. 135) as "[…] the management of a municipal's real estate portfolio by aligning the portfolio and the services to the needs of the municipal organisation as well as the governmental or municipal policy goals, to balance strategic, functional and financial interests and to contribute optimally to a liveable community".

In MREM proceedings there are generally four management "actions": acquisition, holding, disposal and (re)structuring. Within these actions, (re)structuring can be regarded as managing the process in which objects have become obsolete or redundant in their current condition. Strategies are needed for each of these actions as random implementation of decisions will most likely not result in a favourable situation regarding the municipal objectives. O'Mara (1999, cited in Van den Beemt-Tjeerdsma & Veuger, 2016) describes three generic strategies that can be employed, including the incremental strategy, the standardisation strategy and the value-based strategy.

3.4 Adaptive reuse

Continuing the described "actions" and strategies in the previous chapter, this chapter describes adaptive reuse as real estate strategy. Where first the principle and process of adaptive reuse are described and compared to CREM and other traditional building projects. Followed by an overview of actors and the different criteria and factors that influence adaptive reuse decision-making as described in literature.

3.4.1 Adaptive reuse as real estate strategy

As explained in the introduction, adaptive re-used can be de ned as converting a building to another use, because it has become redundant due to demographic changes, changing economic and industrial practices, etc. The aim of adapting a building to a new use is to convert the building from its original function to a new use that can bring back the accessibility and usability of the place, extending the lifetime of the building.

In CREM, adaptive reuse is often seen as an expensive and disrupting strategy for business operations. Implementing adaptive reuse as strategy will only succeed when the object is no longer suitable for its current use and/or the market value after adaptive reuse increases. Being the highest and best use of the property is therefore a crucial requirement in the success of adaptive reuse in CREM (Remøy, Hordijk, & Appel-Meulenbroek, 2016). It is assumed that these notions are also applicable to MREM practices. However, as the definition of MREM stated, the main objective for MREM is to seek balance in strategic, functional and financial interests to contribute optimally to a liveable community. This shows that non-economic values are of importance as well. A more value-based strategy, which was explained in the previous section, fits quite well with this notion, in which place, environment and object characteristics are of importance too.

3.4.2 Process of adaptive reuse

In many ways, the process of adaptive reuse is similar to the process of developing a new building (referred to as a "traditional" building project), with an initiation, preparation, execution and exploitation phase, in accordance with the described building cycle by Wamelink, Geraedts, Hobma, Lousberg, and de Jong (2010, p. 7). Nonetheless, there are also considerable differences as one is dealing with an existing building, an existing contour that puts a large definition on the course of the project. Especially when regarding the adaptive reuse of cultural heritage. Multiple interests are involved and need to be considered and there is a higher sense of responsibility when dealing with these historical "artefacts" as they often represent a certain identity of that location and environment. Pickard (1996, cited in Bullen & Love, 2011a) argues that sustainable historic environments should:

- reflect local life;
- maintain local identity, diversity and vitality, and;
- develop collective responsibility for heritage assets.

Based on earlier research conducted by Andriessen (2007), Benraad, Scheldwacht, Singelenberg, and Steetskamp (2012) and Vervloed (2013), the process of adaptive reuse and its relation to a traditional project are summarized and briefly described in figure 3.7.

A considerable difference between the process of adaptive reuse and the process of a traditional development is that more time and knowledge is required during the first phases of the project. Research should be conducted to determine the state of the building, because one is not dealing simply with a "blank canvas" and the existing structure needs to be considered when defining the new design. It takes feasibility studies, consultations and several

analyses to determine the architectural, historical and procedural aspects of the building and project (Andriessen, 2007), in which one will find several opportunities, but also challenges and bottlenecks.

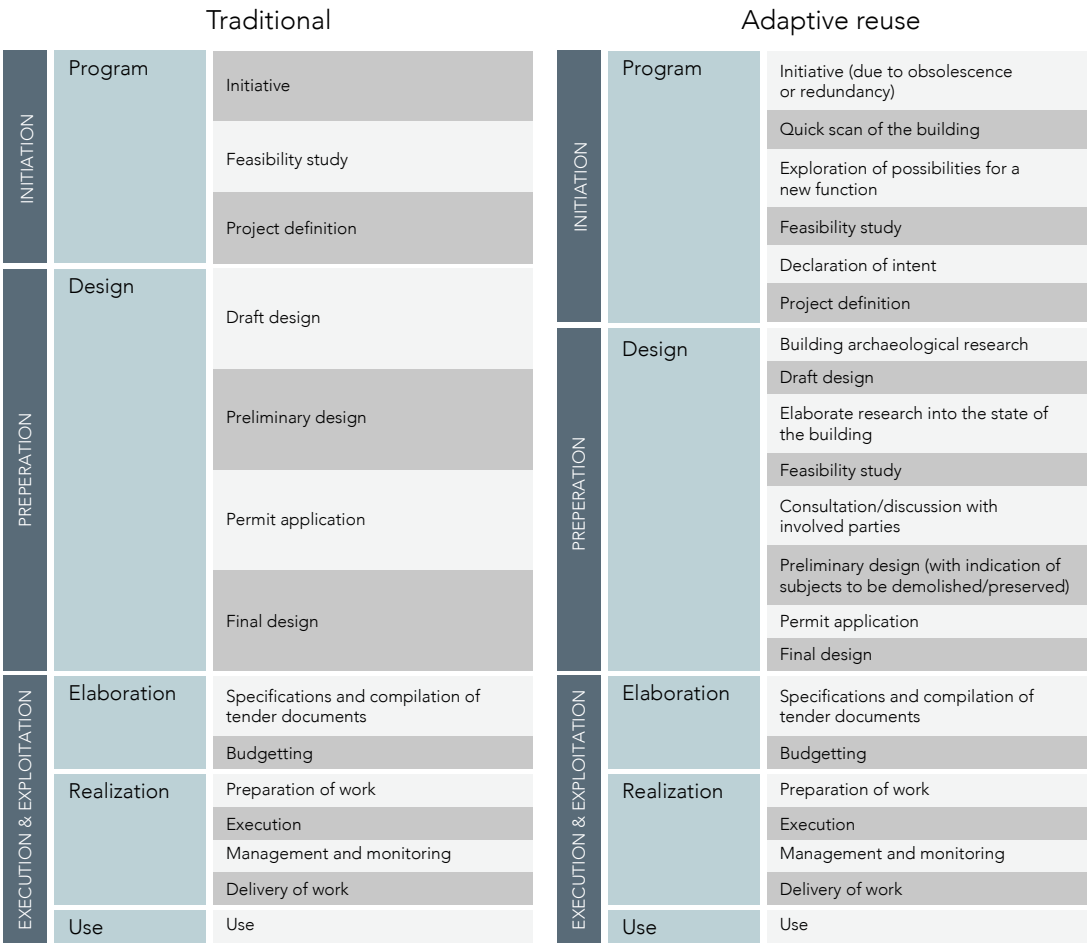


Figure 3.7 Steps traditional versus adaptive reuse project - Visual representation of the different steps in the process of a traditional (new) building project and an adaptive reuse project (Own ill. based on the research by Andriessen (2007), Benraad et al. (2012) and Vervloed (2013))

3.4.3 Actors

According to Mısırlısoy and Günçe (2016), a successful implementation of adaptive reuse requires identification of the actors. "Actors can be defined as the stakeholders that have a role in the adaptive reuse decision making"(Mısırlısoy & Günçe, 2016, p. 93). They propose a step-by-step model in which the decision-making process is explained by a holistic approach. Herein they describe four types of actors: the user, the producer, investor and regulator.

Grootswagers et al. (2013) described a similar notion when they argued that a successful implementation of adaptive reuse is dependent upon a multidisciplinary cooperation with open communication between actors, where creativity and enthusiasm are required to achieve the goals. In their step-by-step plan for adaptive reuse they propose to take the following actors into account: the owner, neighbours, regulator, interest groups, producer and investor.

Pallada (2017) argues that defining the role of the stakeholders will give a much clearer vision of the division of tasks and responsibilities. In a study, the role division of actors for heritage reuse processes were researched and analysed, which resulted in six actors being identified. Including: the owner, the regulator, financier, initiator, producer and the user.

The findings of the researchers on stakeholder involvement and their subsequent roles have been summarized in table 3.4.

Roles	Grootswagers et al. (2013)	Mısırlısoy and Günçe (2016)	Pallada (2017)
User	-	x	x
Producer	x	x	x
Regulator	x	x	x
Investor	x	x	x
Owner	x	-	x
Initiator	-	-	x
Neighbours	x	-	-
Interest groups	x	-	-

Table 3.4 Listed stakeholders in literature - List of stakeholders in the adaptive reuse process according to literature (based on Grootwagers et al., 2013; Mısırlısoy & Günçe, 2016; Pallada, 2017)

In order to compare these roles with practices in real estate management. The summarised roles as described above are compared with the CREM model by Den Heijer (2011). In short, Den Heijer (2011) proposes a model with four different stakeholders. The conceptual framework is based on earlier CREM theory in which CREM perspectives are distinguished in four different quarters: "either focusing on institution (demand side) or real estate (supply side) on the horizontal axis and either focussing on strategic or operational level on the vertical axis" (Den Heijer, 2011, p. 106).

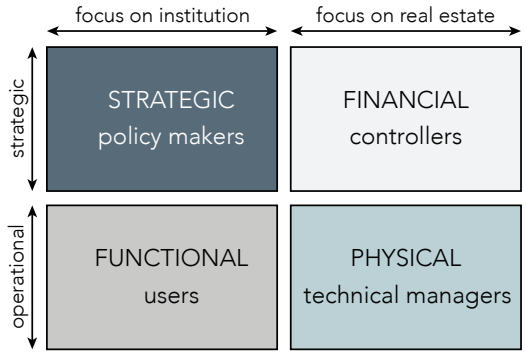


Figure 3.8 Stakeholder framework

CREM-stakeholder model (Own ill. based on Den Heijer, 2011)

In the model one finds policy makers, controllers, users and technical managers. The policy maker has a strategic perspective in which the main goal is to safeguard and guarantee institutional goals. The controller (also referred to as the financier) has a financial perspective in which investments on real estate are compared and weighted against strategic goals. The technical manager has a physical perspective holding account over the quantity and quality of the portfolio and could therefore be compared to a portfolio manager, while the user has a functional perspective looking at the number and type of user, as well as user satisfaction.

3.4.4 Criteria and factors

Several studies have been conducted to identify and establish lists of criteria and factors that should be considered. Principally the described sets of criteria address two main questions: Is the building viable for adaptive reuse? Should you reuse or demolish the existing building asset? Since this research is also focused on establishing whether the municipality should take on the task of adaptive reuse. Another question with subsequent sets of criteria has been added to the overview, in order to corporate a more general real estate management view to the study. These criteria regard the follow question: Should you hold or sell the building asset? The following paragraphs give an overview of the different sets of criteria and factors. The tables with criteria and factors per author can be found in the appendix.

Criteria, adaptive reuse potential

In the early years of the 21st century a lot of research was done in defining the adaptive reuse potential of buildings. Tools were developed to systematically organise and assess properties to see if they are eligible for adaptive reuse. It was an attempt to strive for more ecologically sustainable developments by justifying adaptive reuse of buildings that have fallen into disrepair (Langston et al., 2008). Documented tools include e.g. the Transformation Meter [Transformatie-meter], the Adaptive reuse index [Herbestemmingswijzer] and the Adaptive Reuse Potential (ARP) model.

When Geraedts and Van der Voordt (2002) developed the Transformation Meter, they identified a number of assessment criteria on which the building required analysis. By means of several checklists the adaptive reuse potential of the building was determined. The assessment criteria were categorised into two main factors: location and building. Each with their own set of criterions. In their review on the model they stress the importance of some of the criterion, which they have therefore labelled as veto criteria. These veto criteria act as a GO/NO-GO criterion and are according to Geraedts and Van der Voordt vital to the determination of the adaptive reuse potential. The other criteria have been listed as gradual criteria or criteria for detailed assessment and are used in later phases of the model.

The adaptive reuse index, developed by Hek et al. (2004), is an instrument focused at determining the opportunities for adaptive reuse. By means of numerous steps from an overall assessment to a detailed one, a deliberate advice is given to seek a new balance between market demand and market supply. In the different phases of the model the authors establish a set of criteria, which can be broadly categorised in six clusters including building specifics, function, location, market, legal aspects and financial feasibility.

Conejos et al. (2011) describe a set of design criteria that are used to determine the adaptive reuse potential in the ARP model they developed. They categorised their criterion in seven clusters, based on the seven factors of obsolescence, including physical, economic, functional, technological, social, legal and political obsolescence as de defined by Langston et al. (2008).

Continuing on the ARP model, Langston et al. (2008) describe the application of SINDEX, which is an instrument to rank ARP outcome based on objective. They herein note the importance of organisational objective when deciding upon a strategy. Within the instrument, they identify four objectives, with each objective measured by several criteria.

Criteria, adaptive reuse versus demolition

Even though adaptive reuse potential of buildings could be determined, owners and practitioners were often still reluctant to see adaptive reuse as an eligible option as portfolio management strategy. Demolition and rebuild is often chosen before adaptation without proper consideration of the proper criteria.

In a research conducted by (Bullen & Love, 2011c, p. 33), they sought to 'determine the critical decision-making factors that are considered when determining to reuse or demolish an existing building asset'. The criteria found could also be used in a similar fashion when considering adaptive reuse versus disposal. Their analysis showed that there are three underlying factors that influence the decision-making process; (1) capital investment, which refers to financial aspects of the building and market conditions such as finance, occupier demand and marketability of the building, (2) asset condition, which refers to building characteristics, function and location such as location within the city, structural integrity, internal layout and usability, and (3) regulation, which refers to legal aspects and organisation, with criteria such as governance, legislation and planning requirements. These three factors are, according to their study, subsequently integrated by three sustainability tenets, including environmental, economic and social sustainability.

Yung and Chan (2012) identified several major criteria in the sustainable adaptive reuse decision-making. These factors were clustered in four components – economic, social,

environmental and political. Their research is an attempt in identifying ways in which adaptive reuse of buildings, and in specific heritage buildings, can contribute to sustainability in cities.

Mısırlısoy and Günçe (2016) conducted a similar research at a later stage in which they had two objectives. The first was to provide a comprehensive review of factors influencing the decision-making process and the second was to set up a holistic model to determine the most appropriate function for the building. Their main aim was to overcome the problem of random decision-making of new functions for heritage buildings. They believed that finding the appropriate strategy requires an analytic and scientific method. In addition to factors mentioned by Bullen and Love, they also identified the importance of the actors involved, such as the type of user, producer, investor and regulator.

Criteria, holding versus disposal

Geltner et al. (2001) describe seven constraints and concerns that every investor, either being private or public, should take into consideration. These can be seen as the criteria that need consideration in the decision-making process. A similar set of criteria was identified by Roulac (1996) in their analysis of the institutional real estate investing framework. Another important issue when deciding upon holding or disposing of property is marketability. It was mentioned by Bullen and Love, and Geltner (liquidity), but it is also seen as essential by the BZK (2015, cited in Hoevelaken, 2015), in determining the appropriate sales method. Hoevelaken (2015, p. 52) identified the following categories of marketability:

1. Positively marketable real estate, limited supply on the market, good location with useful function, future use is according to the land-use plan, offers potential return and is of attractive architecture.
2. Reasonably marketable real estate, there is competitive supply on the market, there is a demand for adaptive reuse, good location, there is a need for a change in land-use plan, physical characteristics offers adaptive reuse potential.
3. Ambitious marketable real estate, declining real estate market, declining regional population, land-use plan needs to be adapted to facilitate future use, but there are limited possibilities for adaptive reuse.

The choice for marketability is dependent upon several property characteristics, including location, building performance and market conditions.

3.4.5 Conclusion

Adaptive reuse as real estate strategy is employed with the aim of adapting a building to a new use in order to extend the lifetime of the building. However, in CREM, adaptive reuse is often seen as an expensive and disrupting strategy for business operations. It is assumed that this is because the objective of CREM is foremost focused on financial values. In MREM there is a wider perspective on objective. Where the objective is to seek a balance in strategic, functional and financial interest to contribute optimally to a liveable community. This shows that non-economic values are of importance as well. A more value-based strategy, which is often applicable to adaptive reuse, therefore fits quite well.

In many ways, the process of adaptive reuse is like traditional building projects. Nonetheless, there are also considerable differences as one is dealing with an existing building. When comparing the process to a traditional project it becomes clear that there is more time and knowledge required during the first phases of the project. Research should be conducted to determine the state of the building, because one is not dealing simply with a "blank canvas" and the existing structure needs to be considered when defining the new design.

3.5 Structured decision-making

This chapter describes structured decision-making. It outlines the essence of structured decision-making, formulates elements required in the process. Considers multiple approaches to structured decision-making regarding the phasing of the process, and gives an overview of several models and/or tools used to decide in the real estate sector.

3.5.1 Strategy in decision-making

Obtaining a portfolio that balances financial aspects with the municipal public objectives, requires structure and strategic planning. Bryson (1995, cited in Poister & Streib, 2005) defines strategic planning as "[…] a disciplined effort to produce fundamental decisions and actions that shape and guide what an organization is, what it does, and why it does it". Poister and Streib (2005) continue this note by stating that it requires a systematic process in which information is gathered not only about the object of interest, but also about the bigger picture and the long-term goals.

Real estate decision-making is often unique, as is every property. And requires various choices in terms of prioritising, addressing and implementing certain elements (Roulac, 1996). Langston (2012, p. 108) claims, in his article on validating the ARP model that "[…] there is a need amongst the built environment professions for a transparent understanding of the goals of multiple stakeholders that underpin optimal decisions". There is a lot of uncertainty involved with these decisions, but learning by refining the process of "deciding" should improve future decision. Saaty (2008) argues that gathering information helps to understand occurrences, subsequently enabling us to make good judgements about these occurrences. However, he also stresses that obtaining information about everything does not necessarily translate in better judgement. He stresses that knowing everything is not always better, but knowing the right priorities is key.

One concept often described in literature in order to refine the process of decision-making, is by the structured decision making (SDM) approach. Gregory et al. (2012, p. 6) defines structured decision-making as "[…] the collaborative and facilitated application of multiple objective decision making and group deliberation methods to environmental management and public policy problems… an SDM process is to aid and inform the decision makers, rather than to prescribe a preferred solution". They continue to state that it requires an organized, transparent and inclusive approach in which complex problems can be understood. This is achieved by translating challenges into simple choices, and good choices are made by thoughtful examining of a range of creative alternatives to fully integrate science and public values.

A similar notion is made by Stokman, Van Assen, Van der Knoop, and Van Oosten (2000) in which they emphasize that the difficulty in collective decision making lies in the different positions, preferences and perspectives of the various stakeholders. They claim that a model for strategic and structured decision making can be used to "[…] create sufficient support for a decision, or to arrive at a fair decision on the basis mediation" (Stokman et al., 2000, p. 133).

Another term widely used in literature is multi-criteria decision making (MCDM) and the definition provided by Beynon, Cosker, and Marshall (2001) and Zavadskas and Turskis (2010) closely relates to the previous stated definitions of SDM. They describe MCDM as a qualitative and quantitative judgement of a decision maker on decision alternatives over a range of criteria. These criteria often have different units of measurements and various directions of optimization. Belton and Stewart (2002) defined MCDM to be an umbrella term for various approaches that include individual or collective decision-making while using explicit criteria and objectives. In this thesis, no further reference is made to MCDM as it is assumed that the concept of MCDM is sufficiently embedded in the approach of SDM.

3.5.2 The process of SDM

Stokman et al. (2000) suggest a systematic approach to deal with structured decision making, in which first the problem is decomposed into a limited number of main controversial issues. Then an analysis of the stakeholders, their position, capabilities and salience is required. To thirdly consider various strategies which can be evaluated by using computer simulation models. Gregory et al. (2012) describe an approach with six clear consequent steps:

1. Clarify the decision context: this involves defining the problem, establishing the scope, including stakeholders, and defining who makes the decision and when.
2. Define objectives and measures: this involves defining the key concerns including both quantifiable as well as "hard-to-quantify" values and outcomes. The objectives often relate to ecological, social, cultural, economic and/or health and safety considerations.
3. Develop alternatives: this involves finding alternatives that reflect different approaches based on contrasting priorities that oblige the decision-maker to make a distinct choice.
4. Estimate consequences: the fourth step involves estimating the alternatives on the performance measures.
5. Evaluate trade-offs and select: the goal is to decide between the alternatives and chose one that offers an acceptable balance across various objectives.
6. Implement, monitor and review: the process should promote learning and facilitate the possibility to improve decision-making even further.

Mintzberg, Raisinghani, and Theoret (1976), being one of the first to describe strategic planning and decision-making in a more elaborate way, argue that strategic decision-making is now a concern to almost every organisation. They believe that for decision-making to be effective, there is some consistency required in the process. By analysing different decision-making processes, from different fields, they defined a decision-making process in which they identified three phases.

The first phase is the identification phase. In this phase recognition and diagnosis are central. The problem and the cause of the problem should be recognised and analysed. The second phase is the development phase, in which one searches for a way to develop one or more solutions. This can be either searching for an already existing solution among a large set of alternative solutions, or could entail the search for a whole new custom-made solution. The former can be compared to a convergent strategy, while the latter is more comparable to a so called divergent strategy. Thirdly, the selection phase comprises of screening, evaluation and authorization. Screening is done when more alternatives seem to be acceptable. Next, evaluation by means of criteria provides and overview of the consequences and to what level the solution fits with other proceedings. Finishing with the authorization, when the initial decision-maker is not authorized to commit to the course of action which will proceed from the solution chosen.

Saaty (2008) suggests four steps in his approach for organising decision-making. He starts off with defining the problem and determining what knowledge is needed to develop a solution. The second step is to structure the decision hierarchy, with the goal on top followed by the objectives from a broad perspective, through intermediate levels with criteria and sub-criteria all the way down to the lowest level with alternatives. The third step is to construct a comparison matrix in which each element in the hierarchy is compared with other elements one level lower in the decision hierarchy. The final step is to use the priorities that were set as a way of weighing the criteria in the decision hierarchy in order to obtain weighed values for each of the criteria. All the way down to the weighing of each of the alternatives.

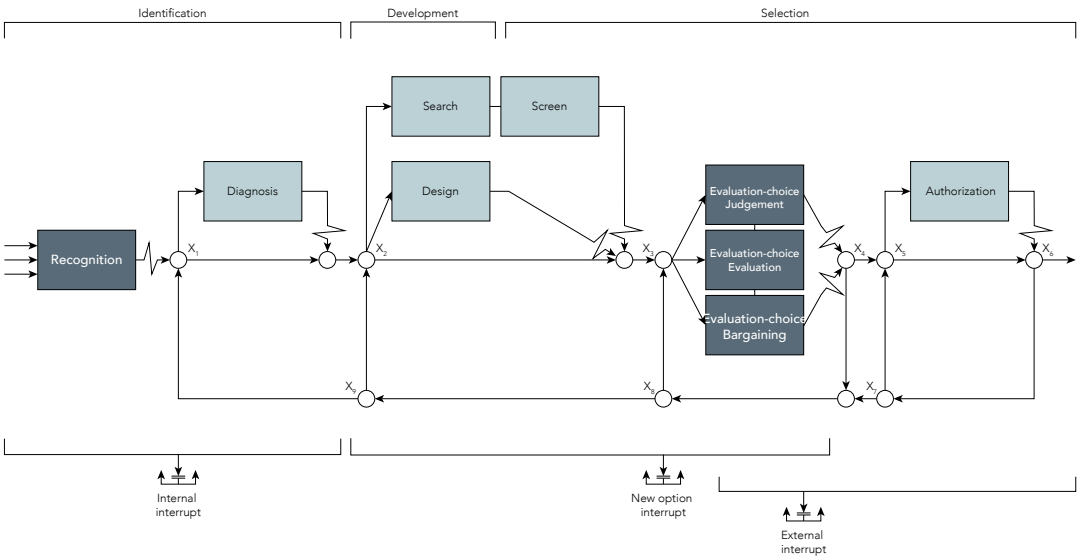


Figure 3.9 A general model of the strategic decision process - Visual representation of the elements and/or routines in a generic strategic decision process (Mintzberg et al., 1976).

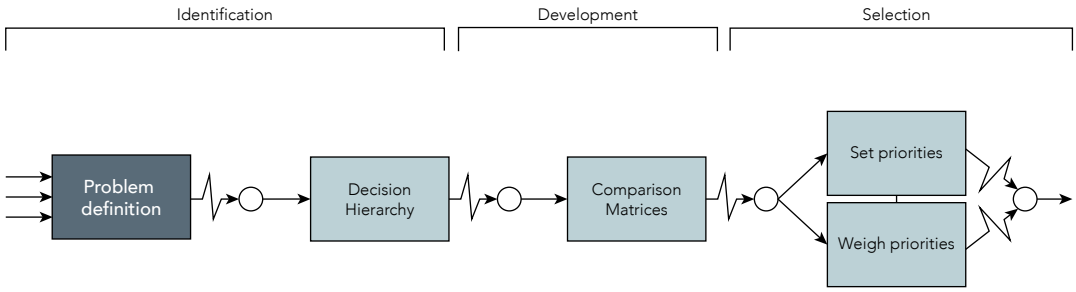


Figure 3.10 The analytic hierarchy process - Visual representation of the decomposed steps in the decision-making process (Own ill. based on Saaty, 2008).

Van den Noort (2011) describes, in his thesis on decision-making in municipal real estate management, a decision-making process consisting of three phases. The first phase is the orientation phase (defining the intended purpose), the second phase is the program phase (establishing the type of accommodation) and the third phase is the project preparation phase (analysing different alternatives). With each of the phases he subsequently adds more detail to the process.

Almost all authors emphasise that, even though they propose strict processes with steps and phases, these steps and phases do not necessarily need to be undertaken in a formal way. They do however feel that designing an explicit step-by-step process or process phasing does ensure consistency so that everyone involved knows what they are up for. Accumulating transparency and trust. Consequently, increasing the possibility of acceptance of the decision by the stakeholders (Stokman et al., 2000).

3.5.3 Interrupts

Even though the described processes have been designed to increase efficiency and effectiveness of the decision-making. One needs to keep in mind that there is always a risk of interruption of the process. Mintzberg et al. (1976) describes five of the general interrupts that one must keep in mind when initiating a SDM process.

- Scheduling delays: There is always the risk of scheduling delays, especially when different actors are involved. Everyone often deals with time-constrains in their personal agenda, which could have effect on the whole process. It is therefore important to decompose the complex decisions into manageable steps. Lowering the time it takes for actors to make a decision.
- Feedback delays: Every round of decisions often requires some sort of feedback from outside. In cases where the decision is complex, the "outsider" might require more time to be able to formulate its feedback. Once again, decomposing the complex decision into manageable steps will help to decrease feedback delays.
- Timing delays and speedups: "Timing is everything". A proverb that is often used to express the importance of other events influencing a desired outcome. This is also true for decision-making. When dealing with a certain context in which the SDM takes place. There could be circumstances under which it might be beneficial to speed up the process or delay the process to await support or wait for better conditions.
- Comprehension cycles: Decision-making is not a linear process, it's cyclical. There will always be factors that require circling back to an earlier phase in order to re-examine the situation. Taking this into account and administering it in the scheduling will help minimize delays.
- Failure recycles: Finding the perfect solution remains a kind of dream in most cases. Compromise is generally needed to find a solution that agrees with all the involved stakeholders. But standing at the end of the process with no acceptable solution is also a very real possibility. Not finding a satisfying alternative might cause a delay, because there simply is no decision made at all. Waiting for circumstances to change before continuing with the projects. Re-examining criteria and priorities could put the alternatives in a different light, possibly rendering an acceptable solution that was previously unacceptable.

3.5.4 Analysis of existing tools

Over the years many have sought to develop a model for adaptive reuse or other real estate related decision-making tools. As part of the literature study on SDM, some of these models and/or decision-making tools were studied and analysed. The analysis included the following models and tools:

- Herbestemmingswijzer (Hek et al., 2004);
- Transformatiemeter (Geraedts & Van der Voordt, 2002);
- ARP and SINDEX (Langston et al., 2008);
- Adaptive reuse model for religious heritage (Hendriks, 2008);
- ABC Model (CGREA, n.d.);
- ROP (CPI & Aedes, 2014).

The Herbestemmingswijzer, ABC Model and ROP will be discussed in more detail.

Herbestemmingswijzer
The "Herbestemmingswijzer" developed by Hek et al. (2004) is an instrument that outlines the potential for adaptive reuse of a building. A large focus herein is on determining a new function for the building after conversion. By means of several steps, from global to detailed, a deliberate advice is given to seek a new balance between market demand and market supply.

The model is based upon four phases and eight steps. These include:

Phase 1. Function:
Step 1: Location;
Step 2: Global description of possible function;
Step 3: Detailed description of possible function.
Phase 2. Combination of functions:
Step 4: Alignment;
Step 5: Concept;
Step 6: Position within the building.
Phase 3. Global layout:
Step 7: Possible variants.
Phase 4. Financial feasibility:
Step 8: Financial review.

The goal of the first phase is to determine the most eligible functions for the building. Information needed in this phase includes information about the location, the market, urban structure, building specifics and legal aspects. The second phase is set to align the possible functions retrieved from phase one. This phase requires creativity, but also more information about the processes of the user and the possible effects of certain combinations, either being positive or negative. Phase three looks more into detail and requires consideration of current building plans in comparison to the initial ideas from phase two. Then the fourth phase describes the financial feasibility study, in which the amount of m^2 is determined and its subsequent implications on the building plans, construction costs and local conditions.

Reflection: Herbestemmingswijzer

- It's a step-by-step plan;
- The target group is anyone with any kind of vacant building;
- The goal is to describe the opportunities for adaptive reuse regarding its new function. A large focus herein is on determining a successful mix of functions to seek a new balance between market demand and market supply;
- The model is based on first defining a global idea (considering functions) and working towards a detailed plan. They herein show that one of the most important factors of adaptive reuse is to determine the future function and how this function relates to the existing context (e.g. building layout, financial situation). This is the basis for any further developments.

ABC Model

The instrument developed by the CGREA (n.d.) is used to map the properties potential in case of disposal/sale. It is based on the Broad Value Assessment. The tool presents a way in which the broader values of a property, like social-economic value, financial value, cultural-historical value and ecological value, are outlined. Its aim is to identify the future possibilities of a property, organise options and outline expected sales revenue (Hoevelaken, 2015). The scan, used to collect information about the property and financial/administrative data, has three main goals:

- To control costs due to vacancy and minimize loss of value;
- To explore potential financial value and possible value creation;
- To identify opportunities and constraints.

The tool consists, broadly speaking, of three phases. The first phase is crowd-sourcing. In which the surrounding residents of the property are interviewed on their opinion. This is told to take about two weeks. Then the next phase is the pressure cooker in which a team of experts and stakeholders are brought together to look at the buildings future potential from multiple perspectives. Herein the context concerning real estate economics, value and social and cultural aspects are determined. The third phase of the tool is answering several questions that will lead to an overall conclusion of what should be done with the property (Hoevelaken, 2015). Options that can be given as the "best" solution are: (1) standard sales, (2) redevelopment, (3) experiment, (4) elegantly in decay, or (5) demolish.

Reflection: ABC model

- It's a step-by-step plan;
- The target group is the Central Government Real estate Agency;
- The goal is to collect both general financial and administrative data about the property as well as to map broader values, such as social-economic and culture-historic value. With the aim of identifying and outlining future possibilities regarding a viable sales approach;
- During the process, not only government officials are asked to determine the value of the object. Through crowd sourcing and a pressure cooker, neighbouring residents are also included in the process. This is makes it a more time-consuming process, but offers the opportunity to value intangible factors as well.

ROP

The instrument ROP (Routeplanner Opdrachtgeverschap) was developed by the Centre for Process Innovation (CPI) and commissioned by Aedes. It is a tool that helps choosing an adequate organisation type for a real estate project to minimize costs and increase efficiency in collaborations. Depending on the characteristics of the project and the initiator/client an overview is given of types of organisation that are suitable or not suitable. The use of the instrument should lead to awareness of the options and spark conversation within the organisation as well as with other parties. The result of the tool is not to give a "best" solution, but to offer information that can be used to make an informed decision. The tool consists of 14 multiple choice questions. Every answer is translated to portray the degree of suitability to the types of organisation. There are four types of organisation specified in the instrument. These include:

- Manage;
- Split;
- Coordinate;
- Connect.

The questions are subdivided into two categories, general project and organisational/ context description. Each of the questions illustrate several factors and criteria that could in influence the decision. The instrument is, according to its developers, best used within the concerned department by filling in the questions separately and discuss the outcomes. This leads to alignment of thoughts and ideas and awareness of the way in which individuals relate to the project (Aedes, 2014; CPI & Aedes, 2014).

Reflection: Herbestemmingswijzer

- It's a guiding questionnaire with comparison matrix;
- The target group are social housing associations;
- The goal is to spark discussion and raise awareness on the different types of organisational models that could be chosen when dealing with a real estate project. It helps to determine suitable options based on project and organisational characteristics;
- The model is based on first defining a global idea (considering functions) and working towards a detailed plan. They herein show that one of the most important factors of adaptive reuse is to determine the future function and how this function relates to the existing context (e.g. building layout, financial situation). This is the basis for any further developments.

3.5.5 Conclusion

Structured decision-making is according to Gregory et al. (2012, p. 6) "[…] the collaborative and facilitated application of multiple objective decision making and group deliberation methods to environmental management and public policy problems… an SDM process is to aid and inform the decision makers, rather than to prescribe a preferred solution". Saaty (2008) continues by arguing that obtaining information about everything does not necessarily translate in better judgement. He stresses that knowing everything is not always better, but knowing the right priorities is key. The difficulty, however, in collective decision-making lies in the different positions, preferences and perspectives of the various stakeholders.

It is suggested that a systematic approach is need to deal with structured decision-making. Summarizing the different approaches described in the previous paragraphs one can assume that the process starts with the identification phase where the problem is identified and the decision context clarified. Followed by a development phase in which the objectives and measures are determined and compared to the alternatives. After which a weighing of priorities leads to the selection and authorization of one of the alternatives in the selection phase. Furthermore, processes are rarely according to plan and interrupts are bound to happen. These interrupts could occur because of scheduling, feedback and timing delays, as well as unexpected speedups, comprehension cycles and failure recycles.

Each of the three tools analysed and described in the previous chapter include elements that could be implemented in the development of the new decision-making model. The first tool (Herbestemmingswijzer), describes a process in which the object is first analysed on several veto criteria, after which more detail is added in the analysis in the next phases. The second tool (ABC-scan), they employ crowd sourcing and a pressure cooker to involve neighbouring residents to the process, even though this is a time-consuming process it offers the opportunity to value intangible factors as well. The third tool (ROP), outlines the clear difference between objectives related to the object and objectives related to the organisation. Defining criteria that cover both perspectives contribute to making a cohesive decision.

4 EMPIRICAL RESEARCH

4.1 Qualitative interviews

The method of qualitative interviewing was used for two purposes. The first was to pinpoint the criteria that are truly important in the decision-making process that is the subject of study. The second was to study processes of decision-making and strategies currently employed in practice. Qualitative interviewing was used instead of quantitative interviewing, because the interviews were not aimed at finding direct answers. The aim of the qualitative interviews was to get insight in what the interviewees (employees of different municipal real estate departments) see as relevant and important when describing a certain process (Bryman, 2016).

The strategy used for sampling the case studies was based on the sampling of context and sampling of participants. The sampling of context is employed in order to achieve both heterogeneity (different sizes of municipalities across the Netherlands) and homogeneity (all within the Netherlands and therefore based around similar management strategies) to exemplify all different types of operations for municipal real estate management found in the Netherlands (Bryman, 2016). This resulted into three types of municipalities; small municipalities (less than 50.000 residents), medium-sized municipalities (between 50.001 and 200.000 residents) and large municipalities (more than 200.001 residents).

Next, the sampling of participants was done by using the client base of ICSadviseurs as a sampling frame. Several municipalities were contacted over an extended period with the aim of interviewing 12 municipalities in total. A sample size of 12 municipalities was chosen, because the sample size is not to small, making it difficult to achieve data, but also not too large considering the limited amount of time available for interviewing and the increasing difficulty to undertake deep, case-oriented analysis when dealing with a large sample size (Onwuegbuzie & Collins, 2007, cited in Bryman, 2016).

Municipalities	N=12	Profession within municipal organisation	N=15
Large (> 200,000 residents)	3	Director real estate department	2
Medium (50,000 – 200,000 residents)	6	Manager real estate team	1
Small (< 50,000 residents)	3	Coordinator real estate development	1
		(Senior-)advisor real estate management and strategy	4
		Advisor real estate policy	1
		Portfolio manager	2
		Project manager	1
		Real estate developer	1
		Account manager	1
		Plan and real estate economist	1

Table 4.1 Characteristics of interviewees - Overview of the size of municipality and profession of interviewees

In selecting municipalities, the objective was to interview at least six municipalities that qualify as a medium-sized municipality, because they are most likely to portray general proceedings in many municipalities in the Netherlands. In the end, the sample consisted of three small-sized municipalities, six medium-sized municipalities and three large-sized municipalities. Prior to each interview the interviewees were informed about the cause and purpose of the research, in addition to the topics of conversation. The interview guide is included in the appendix.

Each of the municipalities were interviewed to understand the context and practices of the following aspects:

- Organisational structure;
- Influences from market conditions and political constraints;
- General real estate strategy;
- Perspective on adaptive reuse.

An elaborate overview of each of the municipalities can be found in the appendix. In this paragraph, a summary and overview of the overall findings will be described.

	Case L_1	Case L_2	Case L_3	Case M_1	Case M_2	Case M_3
Interviewee(s)	Advisor real estate policy Senior advisor real estate strategy Real estate developer	Portfolio manager	Senior advisor real estate strategy	Director real estate department	Project manager Advisor real estate management	Manager real estate strategy team
No. of residents	630.000	520.000	225.000	88.600	56.300	124.000
Real estate portfolio	2.850	1.200	797	160	82	260
Ratio: real estate objects per 1000 residents	4,5	2,3	3,5	1,8	1,5	2,0
Organisation municipal real estate	Centralised	Centralised	Centralised	Centralised	Centralised	Centralised
Centralised since..	2006	-	-	2006	2011	-
Market conditions	After the crisis, they now see an increase in the number of market initiatives and developments	Market conditions are adequate, the municipality sees opportunities for public-private partnerships	Market conditions are good. There is a lot of interest from market parties to invest in and develop real estate objects in the city	Booming market, lots of opportunities and growing population, but increasing land prices make things difficult for some of the healthcare organisations	A shrinking population and limited real estate market results in less initiatives from the market	Market conditions are adequate. Currently you can see a new trend in health care facilities, where several activities are combined
Management strategy	Guiding strategy	Cooperative strategy	Congruent strategy	Congruent strategy	Cooperative strategy	Cooperative strategy
Real estate strategy	Value-based strategy	Value-based strategy	Value-based strategy	Value-based strategy	Value-based strategy	Standardisation strategy

Table 4.2 Overview case studies L_1 - M_3

	Case M_4	Case M_5	Case M_6	Case S_1	Case S_2	Case S_3
Interviewee(s)	Coordinator and senior advisor real estate	Director real estate department	Interim portfolio manager	Account manager	Coordinator real estate development	Senior project / real estate economist
No. of residents	153.600	158.300	112.400	47.500	33.700	37.800
Real estate portfolio	450	177	618	160	-	68
Ratio: real estate objects per 1000 residents	2,9	1,1	5,5	3,4	-	1,8
Organisation municipal real estate	Centralised	Centralised	Centralised	Semi-centralised	Two clusters	Centralised
Centralised since..	2014	2001	2014	2014	2014	2014
Market conditions	Market conditions are improving again and the population is growing, due to the favourable location. Resulting in a larger demand for social housing	No significant details about the current market conditions	No significant details about the current market conditions	Market conditions influenced by a shrinking population and digitalisation of services. The accommodation plan strives for limited public functions on central locations.	Market conditions are mainly influenced by changing demographics. The population is ageing and there are less jobs for high educated youngsters	Market conditions are adequate. There is a growth in population and a large demand for student housing and accommodation for the elderly
Management strategy	Congruent strategy	Cooperative strategy	Passive strategy	Passives strategy	Passive strategy	Cooperative strategy
Real estate strategy	Value-based strategy	Standardisation strategy	Value-based strategy	Incremental strategy	Standardisation strategy	Value-based strategy

Table 4.3 Overview case studies $M_4 - S_3$

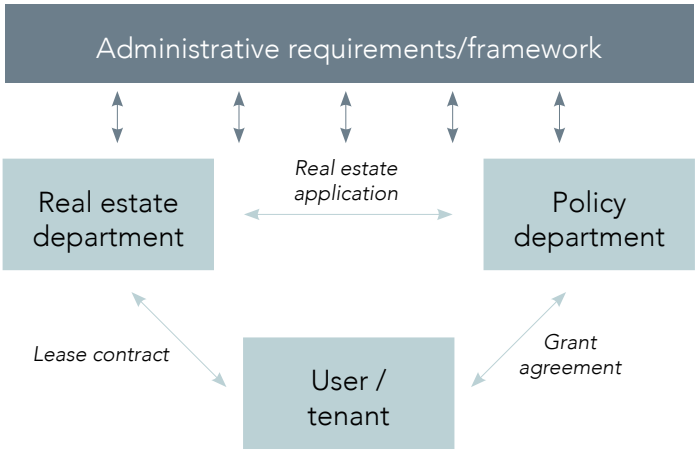
4.1.1 Organisation

The municipality described in case M_5 was the first to initiate centralisation of the real estate department. This municipality started centralising the real estate in 2001. The interviewee stated that the goal of the department is not explicitly to own real estate, but to facilitate when the market is too expensive or not supplying a specific type of function. Real estate should then be employed to steer in a certain direction. By 2014, most other municipalities studied have also adopted a form of centralised real estate department. The interviewees of case L_1 explained that it took as long as three years to complete the process of centralizing the real estate department. The reason for concentrating all the tasks under one section was to ensure that the real estate could be fully used as an instrument for urban (re)development. Secondly, the bundling was supposed to increase expediency in development and exploitation of the real estate and thirdly, all knowledge about the real estate in the municipality would be concentrated and therefore could be better used.

The interviewee of case M_2, argued that before centralisation of the real estate, they noticed that there was no cohesive cooperation. When a new school building was needed according to the policy department for education, they would build a new school and hand the old building over to the department that would manage and maintain the "leftover" real estate. The supply in the municipal portfolio was not considered.

Figure 4.1 Real estate process

Visual representation of the triangular model used to link policy departments, the real estate department and the user/tenant in real estate evaluations (based on policy documents case M_6)



In general proceedings, the real estate department works closely with the different policy departments. According to the interviewee of case M_3, when an accommodation application is formulated, the concerned policy department will formulate 'who' needs accommodation, while the real estate department will then look at 'where', 'how' and 'what'.

4.1.2 Market conditions and political constraints

Market conditions differ considerably when comparing the different case studies. Some municipalities must deal with vacancy and a decreasing population, while others are searching for ways to build more housing as soon as possible. In the larger municipalities, they now notice that market initiatives are increasing again. Opportunities arise for public-private-partnerships and the number of developments within the city is growing. The interviewee in case L_2 states that the objects that were bought by the municipality over the years are now being sold again, because there is an interest from the market. According to the interviewee the municipality is no longer planning to systematically examine and redevelop every neighbourhood one by one. They are now looking more at areas of interest in which they put extra focus to redevelop those objects that specifically require municipal investment.

When looking at the middle-sized municipalities it is heavily depended on the location. Municipalities close to larger cities notice that the market is good. The interviewee of case M_2, acknowledges that they often have no problem selling objects when needed. One of the reasons for this is that the municipality is located near one of the booming cities of the Netherlands. With many expats coming to the municipality to live there and work in the city next to it. Together with other municipalities, they cooperate and try to facilitate enough international oriented services, like international schools, kindergartens, etc. to ensure that the expats will decide to live in their municipality.

For the smaller municipalities, it became clear that most of them face a changing demographic situation. In case S_1 and S_2, the interviewees both argued that the population is ageing, because people are moving away in search of better job opportunities. Limited demand therefore requires a careful consideration of the supply.

Political constraints were in general noted as the requirement to describe proceedings in policy documents and adjust real estate management to facilitate requirements from other policy departments. In the larger municipalities, this was in most cases all, except for the fact that the size of the organisation often causes delay in the authorization of actions. In the smaller municipalities, there was more political involvement. The interviewee in case S_1 stated that in general, the city council and board of Mayor and Aldermen do not set any strict requirements, but do portray the need to sell everything that has no social purpose or does not necessarily need to be accommodated by the municipality. This has been quite defining for further real estate proceedings.

4.1.3 General real estate strategy

Municipality M_6, has the largest portfolio relative to the number of residents. About 5.5 objects per 1000 residents. Followed by municipality L_1, with about 4.5 objects per 1000 residents. The smallest portfolio relative to the number of residents is that of municipality M_5. They were also the first municipality to centralise their real estate and have since then systematically disposed of real estate that they did not find to be of any use.

The interviewee in municipality L_3 stated that in 2016, they submitted the first policy documents regarding real estate to the city council. Within these documents, they describe the policies and strategies regarding disposal, lease, maintenance, development and vacancy. He continues by noting that the motto of the real estate department is: "No real estate, unless..". Ownership of real estate is no goal per se, but municipal real estate can be used as an instrument to contribute to the achievement of public goals.

Most of the municipalities, like in case L_3, have now described their real estate strategy in some form of policy document. Except for the municipality in case S_2, who currently has no policy document regarding their real estate. It is therefore also unclear whether they have an accurate overview of their portfolio. The interviewee did argue that they have sold a lot of real estate in the past few years. He believed that when ownership is not required, the object should be put up for disposal.

Devising tools and matrixes to evaluate the performance and use of the objects in the portfolio is a trend visible in several of the case studies. Municipality L_1, describes a decision tree to determine the strategy for their core and non-core objects. Municipality L_3, mentions a score matrix to rate objects based on their financial and social return. In municipality M_3 the devised a list of criteria with accompanying questions to determine the object strategy. The interviewees in case M_4 and M_6 mention a score card model and the interviewee in case M_5 a policy framework.

4.1.4 Adaptive reuse

The perspective on adaptive reuse differed vastly per municipality. Some were experienced with adaptive reuse, while others did not even consider the option of adaptive reuse. They believed that demolition, to make way for new construction, was much more viable.

When considering adaptive reuse one of the most important criteria was the function. Many of the interviewees stated that the function, in combination with municipal policies, determines whether they would hold or dispose of the object. Other criteria mentioned were the location within the city, the strategic purpose, planning constraints and market conditions.

The process of adaptive reuse could take on multiple forms. Sometimes the adaptive reuse was initiated because the object had been vacant for a long time or the functional/ technical performance was inadequate. In other examples, the initiative came from a market party or private organisation, who saw an opportunity in the redevelopment of the object. In many of the examples the object was sold with specific conditions, but other outcomes could also be that the municipality would execute the adaptive reuse themselves or outsource the work to a third party. Figure 4.2 shows several of these examples.

When looking at the management and real estate strategy most of the municipalities have adopted a value-based real estate strategy, especially with regard to adaptive reuse. The management strategy however showed more variations. The cooperative and congruent strategy were the most employed strategies, but there were some exceptions were the small municipalities tended to be more passive and the large municipalities a little more guiding.

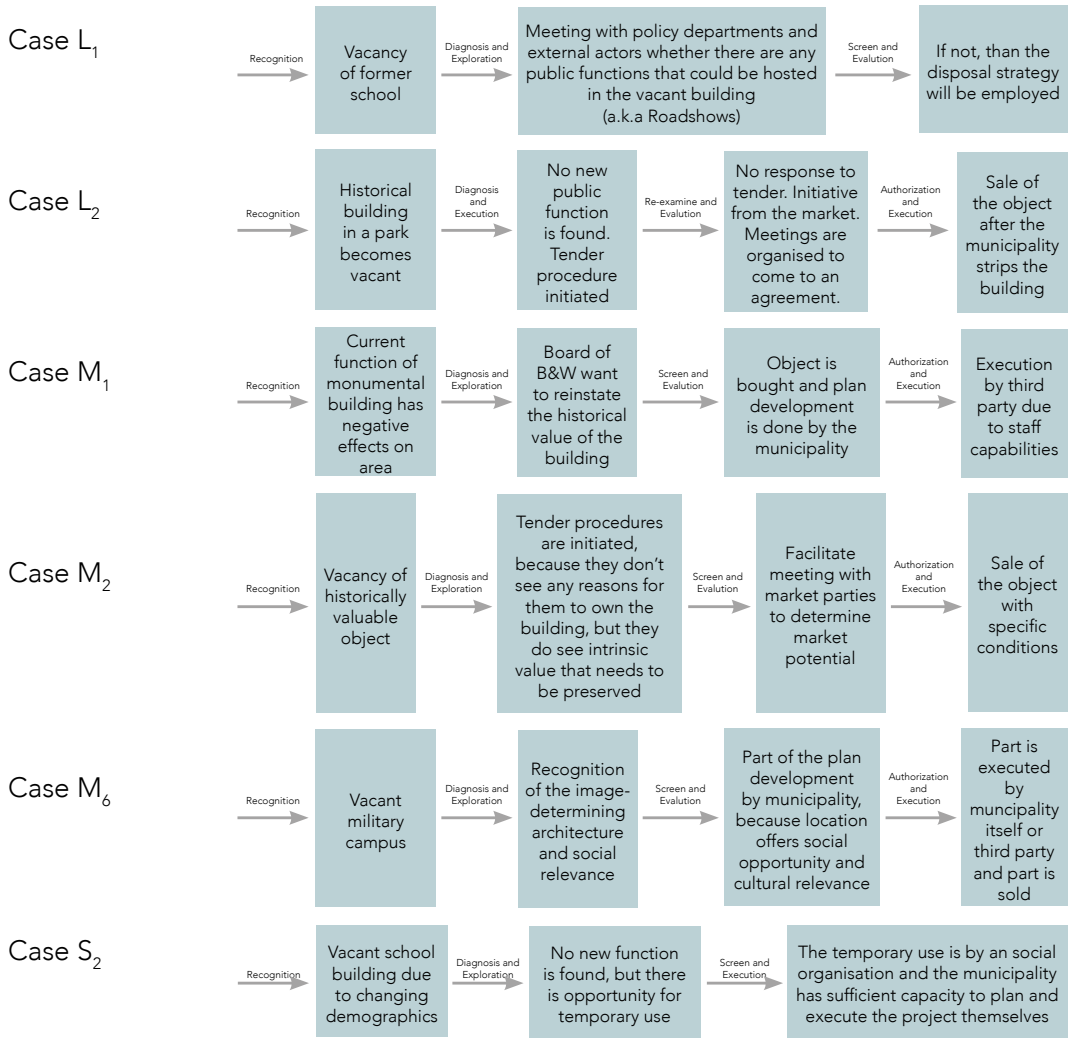


Figure 4.2 Examples adaptive reuse process - Analysis and visual representation of several examples of adaptive reuse in the different case studies.

4.1.5 Criteria in adaptive reuse decision-making

In chapter 3.4, an overview was given of the criteria found in literature regarding adaptive reuse and real estate management decision-making. These lists of criteria were used as the basis for developing a set of key concerns. The categorisation is based on the model by Bullen and Love (2011c) in which they identified three underlying factors to adaptive reuse decision-making; asset condition, capital investment and regulation. Each of these factors have been further subdivided into six categories. After filtering the criteria, by combining and omitting some criterion with similar definitions, a list of 53 criterions is established. The list was then used to code the interviews. Identifying which municipalities regarded which criteria of importance in the decision-making of adaptive reuse. While conducting the interviews, it became apparent that there were more criteria that influence the decision. These were added to the list summing up to a total of 59 criterions. The total list of criteria is included in the appendix.

Tables 4.4 and 4.5 present the outcome of the coding of interviews. The criteria that are mentioned by most of the municipalities are assumed to be most important. A criterion can be graded on the scale of 0 till 100%. With 100% meaning that the criterion is mentioned by all twelve municipalities and subsequently receiving 0% when being mentioned by none. In coding the interviews, it soon became apparent that some of the criterions found in literature would not be of importance in the decision-making process. They were not mentioned by any of the interviewees and could be omitted from the final set of criteria. These criteria included for instance 'layout of the building', 'year of construction' and 'heritage law'. One could argue that for the criteria linked to asset condition this is because these criteria are more important in the determination of the adaptive reuse potential, then in the decision of who should execute the work.

The twelve criteria who received the highest score are shown in table 4.4. Herein one can see that 'eligible function', 'market conditions' and 'municipal policy' were mentioned by all municipalities. But also 'planning constraints', 'political context', 'strategic purpose' and 'location within the city' were mentioned by more than 80% of the interviewees. Table 4.5 gives an overview of the relative importance of each of the factors to which the criteria are linked. Herein one can see that when looking at overall factors, one can assume that the most important factor to be considered is that of function (22%), followed by market (17%). After which, organisation, location, legality and finance are examined. Building criteria (8%) are according to these results believed to be of less importance in the decision-making process. This would be in accordance with the assumption that specific building criteria are of importance to the determination of the adaptive reuse potential, but no so much the determination of whether the municipality should execute the adaptive reuse or leave it up to the market.

	Criteria	Factor
100 %	Eligible function	Function
100 %	Market conditions	Market
100 %	Municipal policy	Organisation
92 %	Planning constraints	Legality
92 %	Political context	Organisation
83 %	Strategic purpose	Function
83 %	Location within the city	Location
75 %	Benefit-cost ratio	Finance
75 %	Staff capabilities	Organisation
67 %	Marketability	Market
67 %	Risk	Organisation
58 %	Liveability	Location

	Factor
22 %	Function
17 %	Market
15 %	Organisation
15 %	Location
13 %	Legality
10 %	Finance
8 %	Building
100 %	Total

Table 4.4 - 4.5 Results qualitative interviews - Top 12 criteria and relative importance of the overall factors

4.2 Expert meeting

The expert meeting is a method of interviewing where more than one interviewee is present. The main aim of the expert meeting, which could be compared to the focus group as described by Bryman (2016), is to understand how the individuals, experts in this case, react to and discuss the specified topic of adaptive reuse within the municipal portfolio. As Bryman (2016, p. 501) argues, the interest is in "[…] such things as how people respond to each other's views and build up a view out of the interaction that takes place within the group". Which is comparable to the idea of the model. Where municipal real estate managers are not the only individuals involved in the decision-making process, but are required to discuss the issue with several stakeholders with dissimilar views and objectives, while in the end formulating an agreement that is widely supported.

Present at the expert meeting where twelve advisors from ICSadviseurs, each working daily with several municipalities discussing and examining real estate questions, and a representative of the expert team transformation, I. van Leeuwen. The expert team, initiated by the RVO, supports municipalities and other interested parties with adaptive reuse concerns.

4.2.1 The concept of adaptive reuse

At the start of the expert meeting the experts first received a short introduction about the definition of adaptive reuse and were asked to contemplate about the benefits and bottlenecks.

Benefits

- Positive effects on cultural and historical values, where the quality of image-determining buildings can be restored. It preserves town- and cityscapes and could potentially yield a high social return. One of the experts argued that adaptive reuse is a way of embracing "gifts" from the built environment. A lot of existing buildings have qualities that you would not get in a new building.
- The buildings are often located on good locations, where there is opportunity for redevelopment. Adaptive reuse could guarantee the continuity of the location.
- Adaptive reuse is the innovative way of increasing flexibility in real estate and offers opportunity for new initiatives.
- The municipality is the appropriate party to influence the initiation of adaptive reuse. According to one of the experts they can decrease the amount of risk and therefore raise interest from the market.
- Doing nothing, in case of negative exploitation, is also not an option, because vacancy has a negative effect on the liveability.
- It is also based around the principle of 'why built something new when you already have something that can be used?' Adapting the current building is therefore a form of sustainability.

Bottlenecks

- There are no clear policies regarding adaptive reuse. The land-use plan is often not flexible enough for a change of function and adapting the land-use plan requires time. At the same time, there are other regulations that also limit the options.
- A lot of real estate owned by the municipality is illiquid which makes it more difficult to convert.
- There is uncertainty about the costs, the financial feasibility and the book value of the object. It is therefore arguable whether this is the core business of the municipality, because most of them do not have the expertise or knowledge to execute adaptive reuse.

4.2.2 Criteria in adaptive reuse decision-making

During the expert meeting, the participating experts were asked to identify the criteria that they regarded as important in the decision-making process relative to the described alternative solutions, which will be further discussed in chapter 5. In five small groups, they were asked to discuss and determine in collaboration which criteria they would consider. The criteria that were mentioned by all five groups are assumed to be most important. A criterion is graded on the scale of 0 till 100%. With 100% meaning that the criterion is identified by all groups of experts and subsequently receiving 0% when being mentioned by none. Within these proceedings, the experts where not informed about the preliminary findings of the qualitative interviews.

The twelve criteria who received the highest score are shown in table 4.6. Herein one can see that only 'strategic purpose' was mentioned by all experts. Followed by 'municipal policy', 'urban masterplan' and 'staff capabilities', who were mentioned by at least 3 out of 5 expert groups. Within these twelve criteria there is merely one criteria describing a building aspect, which is representativeness of the building.

	Criteria	Factor
100 %	Strategic purpose	Function
80 %	Municipal policy	Organisation
60 %	Urban masterplan	Location
60 %	Staff capabilities	Organisation
40 %	Representativeness	Building
40 %	Liveability	Location
40 %	Benefit-cost ratio	Finance
40 %	(Occupier) demand	Market
40 %	Market conditions	Market
40 %	Marketability	Market
40 %	Political context	Organisation
40 %	Community participation	Organisation

	Factor
23 %	Function
20 %	Finance
18 %	Location
18 %	Market
16 %	Organisation
5 %	Building
0 %	Legality
100 %	Total

Table 4.6 - 4.7 Results expert meeting - Top 12 criteria and relative importance of the overall factors

The overview given in table 4.7 shows the relative importance of each of the factors to which the criteria are linked. Herein one can see that when looking at overall factors, one can assume that the most important factor to be considered, according to the experts, is that of function (23%), followed by finance (20%). After which, location, market and organisation are examined. Building criteria (5%) is according to these results believed to be of less importance and the legality factor (0%) was not identified at all. The assumption is made that legality criteria were not identified by the experts because they believe that the municipality, like other private parties, must comply with regulations even though the permit applications, etc. is just another department within the organisation. This was also insinuated by one of the experts when discussing the issue of land-use plan adaptations and permit applications.

4.2.3 Discussion criteria and process

According to the experts, larger municipalities have overall more expertise and experience in adaptive reuse and the preservation of the built environment. Also, regarding cultural heritage, which is quite a specific type of project. However, one of the experts stated that there is an increasing interest from the municipality to investigate the options of adaptive reuse. They are looking at what is possible instead of what is not possible. Furthermore, there is, overall, more innovation in the building sector, which increases opportunity, with less costs and less time necessary for upgrading the building on e.g. its energy performance.

Amongst the experts there was a discussion insofar as the municipality should focus on the tangible as well as the intangible values. One expert argued that one should look further than just tangible values. Like the functional or financial performance of a building. Look at what you have already got. Maybe having something new and more modern is not always better. Take intangible values in consideration and think about what you leave behind and how you leave it behind when you decide to go for something new. What does the object mean to society? Which values are of importance to the municipality? For some, this will be cultural or historical value. For instance, which objects, neighbourhoods or greenery define the identity of the society? Or the question, which functions do we want to facilitate? What is the demand within the municipality? What could be the strategic purpose in the future?

Another thing one could question is. What kind of municipality is it and in what direction does it want to develop itself? One of the experts argues that we are constantly in transition. Moving from one situation to the next where the context is changing. Vacancy is a development of these transitions. Do you regard this as a problem or an opportunity? What can the market do and where does the market not accommodate in?

The experts note that what you could do is write down what you believe to be of importance and include these with the sale of the object. The conditions could regard, the function, aesthetics, etc. and is legally binding for the buyer. This forces the buyer to consciously think about his purchase and the ideas he has for the continuation of the building. The challenge herein is that the more conditions you formulate, the less marketable the object becomes. One of the experts noted that it could result in a lower financial return, which would therefore be a compromise for setting conditions to preserve certain qualities.

One of the experts argues that the municipality should not execute adaptive reuse themselves. They should not enter a building project as owner or initiator in which they tender an architect, contractor, etc. to execute the work, because this is simply not part of their core tasks. Plan development however is different. This is where the municipality could decide to actively get involved. Later, the expert acknowledged that there is an exception when it regards a building for the municipalities own use or when it is policy supportive.

One of the experts, on the other hand, noted that in case of vacancy, selling the object to the market is not always the solution. The market parties might also not know what kind of function should be accommodated in the object. And they might not be willing to invest in a vacant object, because they wouldn't know why they could make it a profitable, well-functioning building. The municipality should therefore take a more directing role and facilitate the formulation of initiatives and plan developments.

4.2.4 Opportunities and challenges

Opportunities for adaptive reuse in the municipal real estate portfolio

- The revolving budget. One of the experts argues that when an object is sold, the revenues should be reinvested in other objects of the portfolio or area (re) development. This makes sure that the built environment is maintained and looked after.
- Partnerships. Currently there are several organisations that have the aim to preserve significant buildings of the built environment. These organisations buy, adapt and maintain the building. They could therefore be a useful partner for the municipality. Visions and ambitions of the municipality could be embraced by these organisations and preserved while the municipality still focuses on their key objectives and core tasks.
- Conditions of sale. There are also several ways in which certain conditions of sale could maintain a form of control over the object, other than the normal planning constraints that occur with the land-use plan, building decree or heritage law. The municipality could set conditions like mentioned in the previous paragraph,

but they could also include other conditions. Like when the buyer would like to sell again, the municipality will have the first right to buy. Which gives the municipality more certainty on the use and future of the building.
- Participation and cooperation. Organise meetings where neighbouring residents are invited to express their ideas about the building. What they think it should be or what they don't want it to be. Increase transparency between government and public. This also gives a better view on what is needed in that neighbourhood. But also look at new ways of cooperation, where municipality and market meet earlier on or more often in the process.
- Integral actor. The municipality is the only actor who has an integral overview of the current set of functions within the municipality. They should be able to know what is happening in the market, who is involved and where the demand is.
- Initiative. Stimulate bottom-up initiatives instead of pursuing top-down actions.

Challenges for adaptive reuse in the municipal real estate portfolio
- Accountability. When looking at selling the object, sometimes it might require giving the buyer some extra financial means. When there is no book value left and exploitation costs are high. It might be better to sell the object for a symbolic price and give the buyer some extra money to adapt and restore the building. It is however difficult to account for this decision.
- Distrust. One of the experts notes that he finds, when advising municipalities, that there is a lot of distrust between the municipality and the market parties. Bad communication and maybe some negative situations have decreased the amount of trust in another.
- Focus. One of the main issues is that there is too much focus on these conditions, rather than really looking into what the function of the object will be. The function of the object will largely determine its societal value.
- Role objective. According to one of the experts, if the municipality acts like a developer, in most cases this will end badly.
- Political rigidity. There is a fear amongst municipal employees that causes them to sometimes hold on to tight to current practices. The challenge is to sometimes deviate from political rigidity, be flexible and think outside the box.

4.2.5 Tips for the tool development

The tool and decision-making process should not be too rigid, like for instance the process of a tax submission. Having the opportunity to look at the criteria and determine which of them are of importance to that specific object or organisation would make it a more dynamic model. Important therein is also to know which kind of municipality you are dealing with. What their objectives are and how they like to manage their portfolio?

5 FINDINGS

The main aim of this research was to identify the criteria that need to be considered in the decision-making process regarding adaptive reuse within the municipal portfolio. Wherein it was also important to determine the context in which the decision takes place and in what way the criteria can be used in the decision-making process. The product of the research is a tool that can be deployed by the real estate department of the municipality to make concise and justifiable decisions regarding real estate with a potential for adaptive reuse. This chapter presents the main findings of the research. First, the tool will be outlined and explained. Second, each of the elements contributing to the development of the tool; the decision context, decision process and finally the decision criteria, are described.

5.1 The tool

Decision-making is always a consideration between context and value. It is assumed that you will strive for the highest value, but due to the context you are restrained with a certain outcome as result. The basic idea of the developed tool, a comparison matrix and accompanying step-by-step plan, is that there are a fixed number of options, or alternatives, from which to choose. Deciding upon one of these alternatives is done by considering the context and the implications on certain values. It should be noted that it is a concept tool, as the practical implementation of the tool has not been tested.

The tool is used to value the criteria, stimulate critical thinking of the consequences and offer an initiator for discussion. It consists of two parts, the first includes the comparison matrixes with the identified key criteria and sub-criteria. The second includes a step-by-step plan used to place the comparison matrix within a process usable within the context of MREM. On the next few pages, a visual representation of the tool is portrayed.

5.1.1 Comparison matrix

After identification of the key and sub-criteria these were implemented in two comparison matrixes. Wherein each of the criterions is described by means of a question and several answer possibilities. By filling in either A, B, C, etc. for each question, the tool provides an overview of how the answers correspond to the alternative options. Once filled in, the tool gives a suggestion to which alternative would be the best alternative for that specific situation. The comparison matrixes are used in the fourth step (initial exploration) and the sixth step (detailed assessment).

5.1.2 Step-by-step plan

In total, the step-by-step plan consists of seven steps divided over two phases. These steps include:

Phase I – Identification of the decision context
Step 1: Recognition
Step 2: Diagnosis
Step 3: Initiation

Phase II – Development and selection
Step 4: Initial exploration
Step 5: Evaluation & Authorization
Step 6: Detailed assessment
Step 7: Evaluation & Authorization

For each of the steps, it has been determined based on the theoretical and emperical research, which actors should be involved. In the visual representation of the tool, these actors are portrayed on the right side of the step-by-step plan. Note that when an actor is portrayed as dark blue, their involvement is required, whereas the grey colour shows that involvement is optional and should be determined in the first phase.

STEP-BY-STEP PLAN

ACTORS

PHASE I – Identification of the decision context

The first phase of the decision-making process is the identification of the decision context. Within this phase, it is key to explore the adaptive reuse potential and determine the scope of the decision.

Step 1: Recognition

What triggered the initiation of the decision-making process? Start with the recognition of the trigger. Was the process triggered by obsolescence or by opportunity? A quick consideration of the available information is sufficient to determine what caused the initiation of the process.

- Identify the trigger;
- Determine which stakeholder initiated the process.

Real estate manager

Policy manager

Step 2: Diagnosis

Is the building suitable for adaptive reuse? Before adaptive reuse is initiated the potential and feasibility of the adaptive reuse of the building should be established. A quick scan by means of an adaptive reuse potential model can be deployed to determine whether adaptive reuse should be initiated or the building should be demolished and make way for new construction.

- Determine by means of a quick scan whether the building is suitable or unsuitable for adaptive reuse.

Real estate manager

Policy manager

Tenant

Step 3: Initiation

When the adaptive reuse potential of the object is established. The process continues with the third step. What is important in this step is to understand who is involved in the process, what the timeframe is wherein the decision should take place, what the overall building characteristics are and whether there is a function that could be accommodated in the object.

- Identify the stakeholders (actors) that should be included in the assessment of the criteria and when;
- Determine the timeframe in which the process should take place;
- Evaluate the political context;
- Perform a quick scan on the building characteristics;
- Organise a meeting with the policy departments and/or market parties to determine a possible function.

Real estate manager

Director department

Policy manager

Tenant

Market parties

STEP-BY-STEP PLAN

ACTORS

PHASE II – Development and selection

The second phase of the decision-making process is the development and comparison of the key and sub-criteria. Within this phase, it is key to first value the key criteria and make an initial exploration of the alternatives. Possibly to determine whether any of the alternatives can already be disregarded. Followed by a more detailed assessment by means of the sub-criteria in order to determine which of the alternatives would be the preferred strategy.

Step 4: Initial exploration

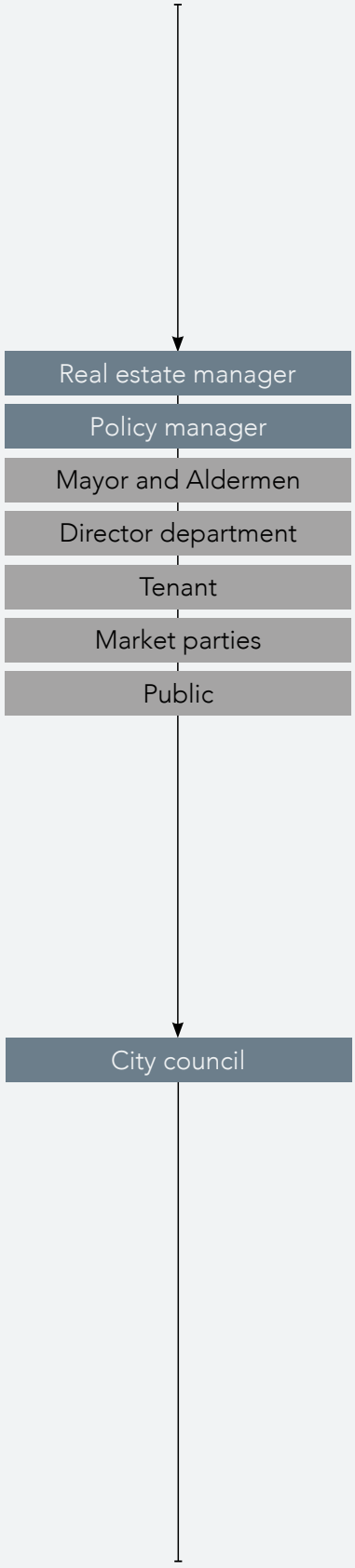
By means of a comparison matrix in which the key criteria are identified, an initial exploration of the preferred alternative can be done. The key criteria include: eligible function, marketability, strategic purpose, management strategy, initiative and benefit/cost ratio. What is important to know is that from the five identified alternatives. There are, based on the plan development and hold versus disposal considerations, seven different paths. This exploration is used to determine whether there are any alternatives or paths that can be disregarded immediately and which alternatives should be considered in the detailed assessment.

- Value the key-criteria in comparison matrix 1 (figure 5.1), together with the identified stakeholders;
- Evaluate and discuss the outcome;
- Reconsider objectives when there is no desirable outcome;
- Write a proposal for the intended strategy based on the initial exploration.

Step 5: Evaluation & Authorization

What was the outcome of the initial exploration and what would that mean for the continuation of the project? This step regards a first evaluation of the results in the comparison matrix and presentation of these results to the city council. Who will then be asked to reflect on the valuation and authorize continuation of the process.

- Present the proposal to the city council;
- When authorization is received, the process can continue to the next step, if not, the outcome of the previous step should be reconsidered.



STEP-BY-STEP PLAN

ACTORS

Step 6: Detailed assessment

By means of a comparison matrix in which the sub-criteria are identified, a detailed assessment of the preferred alternative can be done. The sub-criteria include: size, staff capabilities and experience, risk, timing, location within the city, liveability, urban masterplan, planning constrains, community participation, representativeness, historical and/or cultural value and partnerships.

- Value the sub-criteria in comparison matrix 2 (figure 5.2), together with the identified stakeholders;
- Evaluate and discuss the outcome;
- Reconsider objectives when there is no desirable outcome;
- Write a proposal for the preferred alternative based on the detailed assessment.

Real estate manager

Policy manager

Director department

Tenant

Market parties

Public

Step 7: Evaluation & Authorization

What was the outcome of the detailed assessment and what would that mean for the continuation of the project? Does the outcome correlate with the political context? This step regards the final evaluation of the results in the detailed comparison matrix and presentation of these results to the city council. Who will then be asked to reflect on the valuation and authorize one of the alternatives.

- Present the proposal to the city council;
- When authorization is received, the preparation phase can be initiated, if not, the outcome of the previous step should be reconsidered.

City council

Mayor and Aldermen

Preparation for execution selected alternative

Real estate manager

Policy manager

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
ELIGIBLE FUNCTION	Is there an indication of the function that could be accommodated in the object?	A	Yes, and the municipality has a legal obligation to accommodate the function;						
		B	Yes, the new function regards municipal office space;						
		C	Yes, the new function is supportive to municipal policies;						
		D	Yes, but the new function is not supportive to municipal policies;						
		E	No, the new function is not determined.						
MARKETABILITY	Would the market be willing to adapt the building?	A	The building is ambitiously marketable;						
		B	The building is reasonably marketable;						
		C	The building is positively marketable.						
	Would the market be willing to facilitate the function?	A	The function is ambitiously marketable;						
		B	The function is reasonably marketable;						
		C	The function is positively marketable.						
STRATEGIC PURPOSE	Does the object hold any future strategic purpose?	A	The object has a strategic purpose with regard to the function.						
		B	The object has a strategic purpose with regard to possible (re)development(s) of the area;						
		C	The object has a strategic purpose with regard to financial aspects. It is financially more attractive to hold on to the object (e.g. because of the current market, net operating income, long term objective);						
		D	The object has a strategic purpose with regard to the municipal portfolio. It provides flexibility in case of population growth or shrinkage;						
		E	There is no indication of any (future) strategic purpose.						
	Is ownership required?	A	Ownership is required;						
		B	Neutral;						
		C	Ownership is not required.						
MANAGEMENT STRATEGY	How much control and direction is intended to be taken?	A	The guiding strategy;						
		B	The congruent strategy;						
		C	The cooperative strategy;						
		D	The passive strategy.						
INITIATIVE	Was the process initiated by the municipality or by the market?	A	Yes, internal (municipal) initiative;						
		B	Yes, market initiative;						
		C	No internal or market initiative, process was triggered by obsolescence.						
BENEFIT / COST RATIO	Adaptive reuse of the object will result in a:	A	High social return;						
		B	Some social return;						
		C	Limited social return.						
	The expected net operating income after adaptive reuse will be:	A	Positive;						
		B	Neutral;						
		C	Negative.						

Figure 5.1 Comparison matrix 1 - Visual representation of the comparison matrix used in step 4, the initial exploration (Own ill.)

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
REPRESENTATIVENESS	The object has an image-determining, aesthetic value that holds a certain sense of representativeness for the city.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
HISTORICAL AND CULTURAL VALUE	The object has historical and/or cultural value that should be preserved.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
LIVEABILITY	The object and/or possible future function contributes to the liveability of the area.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
URBAN MASTERPLAN	Is the object located in an area described in the master plan?	A	The object is located in an area described in the urban masterplan or municipal vision. This has implications on the future of the building;						
		B	The object is located in an area described in the urban masterplan or municipal vision. However, this has no implications on the future of the building;						
		C	The object is not located in an area described in the urban masterplan or municipal vision.						
SIZE	The expected financial investment of the project is?	A	High;						
		B	Medium;						
		C	Low.						
COMPLEXITY	What is the expected complexity of the project?	A	High complexity;						
		B	Some complexity;						
		C	Low complexity.						
STAFF CAPABILITIES	What are the capabilities of the employees?	A	Sufficient employees and expertise available;						
		B	Sufficient employees available, but there is less expertise on the matter;						
		C	Sufficient expertise, but there are less employees available;						
		D	There is a minimum amount of expertise and employees available;						
		E	Expertise and/or staffing is available through an external advisor.						
TIMING	Would the adaptive reuse project fit within the current political context and departmental planning?	A	Yes;						
		B	No.						
PLANNING CONSTRAINTS	The current planning constraints are sufficient to ensure the preservation of the building.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
PARTNERSHIPS	Is there an opportunity for a partnership with a market party or other public organisation?	A	Yes;						
		B	No.						

Figure 5.2 Comparison matrix 2 - Visual representation of the comparison matrix used in step 6, the detailed assessment (Own ill.)

5.2 Decision context

Clarifying the decision context is according to Gregory et al. (2012) important in order to define the problem and establish the scope. This notion was also recognised by Mintzberg et al. (1976), who stated that the decision-making process starts with identification; recognising and diagnosing the problem or issue. This section will therefore clarify the decision context by outlining the following aspects:

- Need and purpose of the tool;
- Triggers for the initiation of adaptive reuse;
- Actors involved in the decision.

5.2.1 Need and purpose

Why is there a need for structured decision-making in municipal adaptive reuse processes? The need foremost comes from the fact that adaptive reuse is still seen as a difficult trajectory. This assumption was briefly introduced in the problem statement and was endorsed in the empirical research. The trajectory of adaptive reuse is often unclear, of increased complexity and seen as a risky endeavour. Resulting in a reluctance of municipalities to employ the strategy of adaptive reuse, but also an unawareness on how the municipality could facilitate or guide the market in executing adaptive reuse. Options and alternatives are unclear, as are the consequences of each of these alternatives.

Literature does show that there is an overall growing interest in the principles of MREM (Evers et al., 2002; Van den Beemt-Tjeerdsma & Veuger, 2016). Integral decision-making in these proceedings is not only of interest from an economic point of view, but also due to the increasing involvement of the public. In addition, there is more focus on performance and the collaboration between municipal departments and the market is expanding.

These findings can also be discerned when looking at the different case studies. Almost all municipalities have initiated some form of centralisation of the municipal real estate in the last sixteen years. Centralising the real estate was, according to the interviewees, done to ensure that the real estate, as an instrument for urban (re)development, could be used to its full potential. They stated that the municipal portfolio is a tool to steer and influence social developments. Concentrating knowledge would lead to an increased expediency in development and exploitation. Another interviewee continued by stating that they seek to adapt integral management with the composition of the real estate portfolio. Setting up policy frameworks for the implementation of lease, purchase, maintenance, disposal and development strategies.

Interestingly, they were not the only municipality seeking to formulate a framework, score matrix or decision tree to help them make transparent decisions. As can be seen in chapter 4.1, almost all interviewed large-size and medium-size municipalities have devised these kinds of decision-making tools. The interviewees of these municipalities stated that they use, or are planning to use, these tools to assess the real estate in their portfolio. Most of the tools assess the compliance with municipal policies and the financial return as main indicators, but other values such as the technical status, the public goals, occupancy and strategic purpose are also mentioned in the assessment.

Conclusion: Need and purpose of the tool

The search for integral decision-making, sustainable solutions and the formulation of decision-making frameworks, has sparked the interest to explore the opportunities for adaptive reuse. The developed tool could provide the means to coherently explore the options of adaptive reuse and make a fitted decision.

5.2.2 Triggers for adaptive reuse

To understand the project scope within the decision context, one must also understand the trigger of the process. How and why are these decision-making processes initiated? As was explained before, adaptive reuse can be defined as the converting of a building to another use to extent the objects lifecycle. Redundancy, which is in this respect assumed to be similar to the definition of obsolescence, is therefore a trigger to adaptive reuse. You wish to preserve the building and seek to reverse the redundancy.

Obsolescence

In chapter 3.3, it was noted that there are six types of obsolescence that can cause a change in the real estate strategy. The assumption is that these types of obsolescence cover most of the reasons for which a building could become redundant. Some of the types of obsolescence have been combined, because they portray similar definitions. The types of obsolescence that could trigger the initiation of adaptive reuse are therefore summarized in the following five categories: physical obsolescence, economic obsolescence, functional obsolescence, social obsolescence and legal obsolescence.

Opportunity

In the qualitative interviews, it was verified that obsolescence and subsequent vacancy are reasons for initiating or considering adaptive reuse, but these are not the only triggers. A couple other triggers where mentioned by the interviewees. Rather than reacting to a certain situation, where adaptive reuse is employed as an emerging strategy, adaptive reuse could also be initiated as an intended strategy. For instance, when they recognised an opportunity in the process of area (re)developments. This occurred in the municipality described in case M_1 where opportunity emerged when the municipality was involved in the broadening of the highway. The building, a former church, was acquired for the purpose of adapting the building to a public function during the redevelopment of the area.

Another type of opportunity identified was when public interest is shown in the object, which was the case in one of the examples given by the interviewee of case L_2. The example showed, a vacant historical building in the park, that was being disposed off through a tender procedure. Unfortunately, the tender did not receive any responses. A while later, there was an initiative from the neighbouring residents to collaboratively adapt the building to a restaurant function.

Conclusion: Triggers to initiate adaptive reuse

The possible triggers for initiating the decision-making process are therefore summarized into two categories. Either the process is initiated due to obsolescence or is initiated through opportunity. Each of the triggers are outlined and explained in table 5.1.

Category	Type	Category
Obsolescence	Physical	When the physical and/or technical performance is reduced to such a state that the building can no longer comply with the required status sufficient for adequate use.
	Economic	When the object is no longer the best fit for the organisational objectives, because the market has changed, the net operating income is negative, etc..
	Functional	When the requirements of the user(s) do not comply with the current functional performance or when the activity accommodated is no longer required.
	Social	When changes in society adjust the demand of the current use, or when the current state of the object has a negative influence on the surrounding area.
	Legal	When revised regulations require modification or substitution.
Opportunity	Area (re)development	When opportunity arises, and is recognised, when other elements in the area are being (re) developed.
	Public interest	When a proposal is formulated by residents, market parties, etc. to initiate adaptive reuse.

Table 5.1 Triggers to adaptive reuse - Outline and categorisation of triggers for adaptive reuse

5.2.3 Actors

The final step in outlining the decision context is to devise an overview of the actors. Which stakeholders are involved? What are their objectives and their subsequent roles? Due to a lack of literature specifically on the topic of adaptive reuse in municipal real estate strategies, the list is devised by examining roles and stakeholders in the municipal organisation, adaptive reuse and CREM.

Municipal stakeholders

In chapter 3.2, we established that the municipality is divided into three municipal organs: the controlling (city council), executive (board of M&A) and managing organ (municipal civil service). Van den Noort (2011) continued this notion by further subdividing the roles of control, execution and management into actors that take part in the decision-making process of MREM. He identified the city council as the supervising role and the board of Mayor and Alderman as the directing role. The municipal civil service consists, as was explained in chapter 3.2, of a large organisational structure of different policy departments each tasked with a specific part of the municipal affairs. In the decision-making model of Van den Noort, three stakeholders where selected as being important to the process. These included the director of the department in question (the civil service client), the policy manager (accommodation applicant) and the real estate manager (in this case the owner). Furthermore, Van den Noort also added the tenant as one of the stakeholders in the process.

Government body	Municipal stakeholders	Roles
Municipal administration	City council	Control / Supervision
	Board of Mayor & Aldermen	Director
	Alderman policy department	Administrative client
Municipal civil service	Director department	Civil service client
	Policy manager	Accommodation applicant
	Real estate manager	Owner
	Tenant	User

Table 5.2 Municipal stakeholders - List of municipal stakeholders and their roles

Each of the municipal stakeholders listed in table 5.2. was assessed and validated by means of the empirical research. For example, in the policy documents of municipality L_2, a visual representation was given of the actors involved in administrative meetings regarding the municipal real estate portfolio. In the representation (figure 5.3), the aldermen and the directors of the policy departments would formulate and determine what needs to be executed by the real estate department and the policy departments.

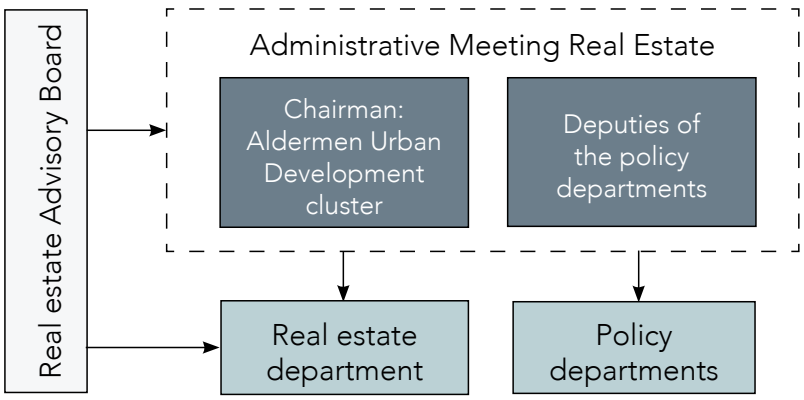


Figure 5.3 Stakeholder framework

Visual representation of stakeholder frameworks based on the analysis of policy documents (Own ill. based on case studies L_2 and M_6)

Actors in adaptive reuse and CREM

In chapter 3.3, we established on the basis of findings from Grootswagers et al. (2013), Den Heijer (2011), Mısırlısoy and Günçe (2016) and Pallada (2017), that the most important actors in an adaptive reuse project or in corporate real estate management include the user, producer, regulator or controller, policy maker, investor, owner, initiator, neighbours and interest groups. The findings confirm the important roles of e.g. the regulator (or controller), investor and owner in the process. Differences appeared when looking at the more specific actors involved in a building process, like the producer, the initiator, neighbours and interest groups, who are not immediately considered in "standard" portfolio management. In this research, the producer can be disregarded as the focus is on the initiation phase of the project. The initiator in this process will most likely be a stakeholder within the municipality and is therefore sufficiently covered with the other roles. Neighbours and interest groups are however of importance to the process. Especially when considering that co-production and societal influence are trends that are highly notable in current public management practices. Pallada (2017, p. 16) argues that "[…] they could be willing to think along, help or even co-develop, however they can also disturb, delay or even stop a project whenever they are opposed the reuse plans or whenever they feel ignored".

Conclusion: Actors in the municipal decision-making process of adaptive reuse

Summarizing and conceptualizing the different roles found in literature and the empirical research, result in the following eight actors that are of importance in the decision-making process.

Actors	Role	Objective
City council	Controller & Investor	Acts as the controller and investor, with a strategic focus on real estate. The city council sets targets and makes the final decisions. Their main objective is to maximise utility while minimizing financial resources. But the main objective is to optimise social and political outcome.
Board of Mayor & Aldermen	Controller & Policy maker	Acts as the controller and policy maker with a strategic focus on the process. The board of M&A is the director over the different municipal departments. They monitor compliance with the targets of the city council and stipulate what policies need to be devised. The main objective is to minimize political.
Director department	Controller & Policy maker	Acts as the controller and policy maker, with a strategic focus on the process. The director of the policy department could be regarded as the official client of the municipal civil service. He monitors and directs the policy department.
Policy manager	Policy maker	Acts as policy maker, with a strategic focus on the institution. The policy manager is the accommodation applicant towards the real estate department and acts as the link between the real estate department and the tenant/user.
Real estate manager	Owner	Acts as owner and technical manager, with a focus on the operational side of the process. Within proceedings the real estate manager is the contracting authority. Their objective herein is to maximise utility and minimise resources, while working within the societal and political context.
Tenant	User	The tenant uses the building. Whether it is right now or in the future. They can therefore give an indication of what accommodation is needed.
Market	Investor or Initiator	Acts as a possible investor or initiator in the process with a focus on the real estate object.
Public	Neighbours & Interest groups	Acts as a neighbour and interest group and should therefore be considered to make sure that plans are not opposed.

Table 5.3 Actors - List of actors and their roles, involved in the decision-making process

5.3 Decision process

The next step is to define the decision process. When outlining the decision process, it is important to understand what the decision entails and what the options are. It is therefore necessary to determine the alternative options between which the decision can be made. According to Gregory et al. (2012) finding alternatives involves reflecting on the different approaches by looking at contrasting priorities in order to oblige the decision-maker to make a distinct choice. This section will therefore clarify the decision process by outlining the following aspects:

- The decision hierarchy;
- The possible alternatives;
- Steps in the process.

5.3.1 Decision hierarchy

According to Saaty (2008), making a decision in an organised way requires structuring and decomposing the decision. He suggests that the decision is to be structured in a decision hierarchy, in which, through intermediate levels, the decision is decomposed from a broad perspective to a more detailed perspective. With usually a set of alternatives at the lowest level. This section will therefore outline the decision hierarchy by the intermediate steps (initiative, key question and sub-questions) taken in the process of decision-making. To determine the alternatives, which will be further discussed in the next paragraph.

Initiative - Adaptive reuse versus demolition
When a building has become redundant or obsolete, the first consideration is to determine whether the building has a potential for adaptive reuse or could better be demolished to make way for new construction. Several studies have been conducted to determine the critical decision-making factors to analyse the adaptive reuse potential (Bullen & Love, 2011c; Geraedts & Van der Voordt, 2002; Hek et al., 2004; Mısırlısoy & Günçe, 2016; Yung & Chan, 2012). One can therefore conclude that the first step in the decision hierarchy is to determine whether the object has a potential for adaptive reuse, or should be demolished in order to make way for new construction. Considering the fact that the criteria to determine the adaptive reuse potential have been extensively studied. It is therefore assumed that the diagnosis of the adaptive reuse potential could be determined by using one of the existing models and is thus disregarded from this research.

Key question - Hold or disposal
In chapter 3.3, it was explained that portfolio management is largely based on four main actions; acquiring real estate, holding real estate, disposing of real estate and restructuring (Vastgoedbedrijf Zoetermeer, 2013). When initiating adaptive reuse (restructuring), the key question would be: who will execute the adaptive reuse? Should the municipality execute the work or leave it up to the market? This depends largely on the objective for the future. Is there a wish to keep the object within the portfolio or is there no specific reason to keep it? In the empirical research, it was established that when there is no specific need to accommodate an activity within the object, then the municipality should not own the object. This means that in this case, there are two options. Either the municipality holds the object and initiates adaptive reuse or disposes of it leaving the adaptive reuse process to the buyer. It therefore comes down to the question, why would the municipality hold certain objects? In analysing the case studies, it became clear that the question of holding versus disposal is currently being discussed in many municipalities. Several of the interviewees noted that they have devised score matrixes and performance assessment tools to determine which objects should remain within the portfolio and which should not.

Sub-question - Plan development
During the expert meeting, it was argued that the municipality should take a more directing role in facilitating and formulating adaptive reuse projects. That doesn't mean that they need to execute the work themselves, but according to one of the experts there are several cases in which the municipality could act as an active initiator and develop plans for adaptive reuse. They indicated that in case of vacancy, selling the object to the market is not always the solution. Market parties might not know what kind of function should be accommodated in the object and therefore lack a willingness to invest in the object. This is where the municipality could step in and together with other actors develop a plan, after which they can still decide to dispose of the object. In the case studies, similar discussions between municipality and market occurred. Mostly because they did not find a new function immediately, the marketability was low, or the municipality simply wished to be involved from a managerial perspective.

Sub-question - Execution of the work
When deciding to hold on to the object, it could be delineated from the case studies that the next step in the decision hierarchy is to determine whether the municipality should execute the work themselves or outsource the execution to the third party. This means that there are two alternatives when deciding upon adapt & hold: execution by the municipality and execution by a third party.

According to the experts, the criteria important in the decision between these two alternatives mostly depends on the organisational factors, the willingness to bare risk and the overall management strategy. This is also illustrated by literature, in which choosing between certain building organisational models is according to De Koning and Sproncken (2001, cited in Wamelink et al., 2010) dependent on the influence and expertise of the client, the distinction between development and exploitation, their ability to cope with influencing factors from the market, politics or environment and the integration of the project's revenue into the tendering process.

Sub-question - Disposal strategy
When deciding upon disposal, the municipality is still left with a choice. From the empirical research one could see that more and more often the municipality sells an object with certain conditions. The experts regarded this as an opportunity to maintain a form of control over the object. Nonetheless, when it regards an object that does not require any specific attention it can just be sold without any conditions of sale. Unnecessary, extra work will only cost more time and money. Based upon these notions one can determine that there are two alternatives when deciding upon disposal: disposal with conditions of sale and disposal without conditions of sale. In analysing the examples of adaptive reuse in the case studies it became clear that the criteria important in the decision between these two alternatives mostly depends on building, function and location factors. Whether the municipality has a certain interest in preserving characteristics of the object or the area. The experts argued that it also depends on the amount of control they would like to keep.

Further considerations
The decision between adapt & hold versus disposal is however not always clear-cut. The interviewee of municipality L_2 portrayed a situation in which the municipality tried to tender an object that had been identified for adaptive reuse. Unfortunately, there were no adequate responses. They then received an initiative from the neighbourhood to start a restaurant in the building. After several meetings and discussing the options with the initiators, they came to the agreement that the group of initiators would buy the object from the municipality after the municipality had stripped the entire building. This example shows that there is also an option in which the municipality executes some work of the adaptive reuse in order for it to be sold. This option can be regarded as a very specific condition of sale.

Conclusion: The decision hierarchy

Summarizing the mentioned questions and different steps found in literature and the empirical research, results in the following decision hierarchy (figure 5.4). The decision hierarchy consists of five steps, the first is the building, the initiation of the decision process. The second step is the decision between adaptive reuse and demolition. The third step is the decision regarding the plan development, and the fourth step the decision regarding the question to whether the municipality should hold on to the object or dispose of it. While the last step determines the decision in what way the project should be executed.

What should be noted is that based on the decision hierarchy, one could argue that there are eight different "paths". Either one of the alternatives is chosen by following the path through 'plan development by municipality' or 'plan development by market'. In case of the latter, it is highly unlikely that the municipality will still hold on to the object. Which means that the path: plan development by the market -> adapt & hold, can be disregarded as option. The same applies to plan development by the municipality -> disposal without conditions of sale. Which leaves five possible options.

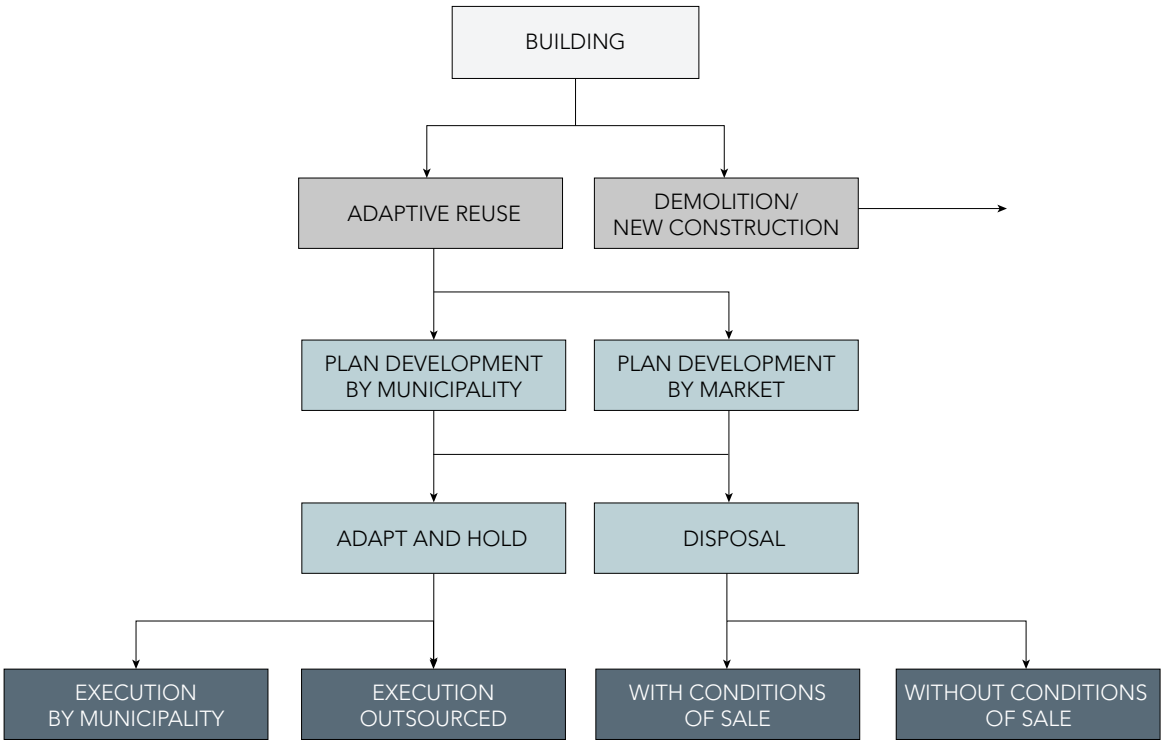


Figure 5.4 Decision hierarchy - Visualisation of the decision hierarchy and the four alternatives (Own ill.)

5.3.2 Alternatives

In the previous sub-paragraph, it was concluded that based on the theoretical framework and the empirical research one can determine that at the bottom of the decision hierarchy there are in principal four alternatives. These include: execution by the municipality, execution by a third party, disposal with conditions of sale and disposal without conditions of sale. What does each of these alternatives mean and what are their consequences once chosen?

Each of the alternatives, consequentially will result in a different course of action. An elaborate overview of the steps per alternative is included in the appendix. This also has an impact on the value of the criteria. It is therefore deemed necessary to analyse the alternatives more into detail. Each of the alternatives are evaluated by means of the MOTIQ approach. This approach is quite common in the Dutch building industry as a means to put the project into perspective, for monitoring and control (Wamelink et al., 2010). The approach consists of five management aspects: Money, Organisation, Time, Information and Quality.

- Money is always a derivative of something else; quality and time when considering the project outcome, and information and organization when considering the process. Depending on the type of project, money plays a more or less important role.
- Organization is considered here as arranging the structure of the project. Topics of organizational management are: selection of competent project team members, organizational models, contract models and collaboration and team formation.
- Time is money. There is a strong parallel between the aspects of time and money. At least for the start of a project phase, it should be clear within what timeframe this phase will be performed. Time planning is needed for budgeting the plan, estimating lead time and required means.
- Information management is important to steer a project. A distinction is made between undocumented and documented information. Certain sets of information are often required to make decisions about the further development of the project.
- Quality is defined as the extent to which the project results meet the requirements. Without a proper specification of the requirements it cannot be determined unequivocally whether a project has been successful.

Table 5.4 provides an overview where each of the alternatives are analysed based on the five management aspects of the MOTIQ approach. This overview contributes to the following delineation and description of the four alternatives.

Execution by the municipality

With this alternative, the municipality remains in total control of the object and gives a lot of direction to the execution of the works. This alternative will require sufficient capital investment. Offers a large involvement of the (experienced) client with a competent staff. The maximum amount of time is required to be invested in the project. Making a clear planning with sufficient lead time and accessible means is necessary. Up-to-date information is needed throughout the process to check progress and guarantee the aimed quality. But executing the work themselves also allows constant monitoring and steering of the project.

Execution by a third party

With this alternative, the municipality remains owner of the object but outsources the actual work to a third party. This alternative still requires sufficient capital investment and an involvement of the client. Although the involvement of the client in this case is less, and the client does not have to possess any specific expertise on the matter. Therefore, offering the opportunity to focus on their core business. Information and proper specification about the desired outcome

should be clear upfront, but other than time-to-time updates the risk of keeping information and quality assurance can be placed with the third party.

Disposal with conditions of sale
With this alternative, the municipality is no longer owner of the object, but sells the object under specific conditions. These conditions could mean that the buyer is somewhat restricted in what he or she would like to do with the object. Herein the municipality keeps a form of control over the future of the building. Or the municipality could come to an agreement with a market party in which they strip the building in preparation of adaptive reuse in order for it to be sold. This alternative requires limited capital investment where the (financial) return depends on the societal quality of the object, the selling price and the book value of the property. Organizational management of the adaptive reuse is left to the potential buyer. Information about the desired quality should be well documented and the disposal timeframe should be determined up front. Quality assurance can only be achieved by proper specification of the desired result.

Disposal without conditions of sale
With this alternative, the municipality is no longer owner of the object and does not wish to hold any control of the future of the object other than what is stated in the land-use plan and other legal requirements. The return of this alternative is mostly financial and depends on the selling price and the book value of the property. A minimal amount of time is required, because specification of a certain idea, quality or desired outcome is not documented. Once the object is sold, the previous owner no longer has control over the future of the object (besides general planning regulations).

Conclusion: Consequences of the alternatives
What can be concluded from the overview of different alternatives is that in terms of money, organisation, time and information, more is required from the municipality when they choose to adapt the building with the aim of holding it within the portfolio. It is there that the question rises to whether the municipality should invest time and money in such "secondary" businesses or if they should simply focus on their core business. Disposal would therefore be an easier option. However, with disposal it is more difficult to safeguard qualities, as the control is capitulated to the buyer. Also, when there is no immediate buyer for the property, or the property has a negative book value, it would remain a question to whether there is any positive financial return.

	Money	Organisation	Time	Information	Quality
EXECUTION BY MUNICIPALITY	Sufficient capital investment. (Financial) return depends on other four management aspects.	Large involvement client, which often requires a more experienced client with competent staff.	Maximum amount of time required. Clear time planning to determine project budget, lead time and availability of means.	Monitor and control of the project requires up-to-date information to check progress and guarantee the aimed quality.	Quality assurance can be monitored and steered all the way through the project.
EXECUTION BY THIRD PARTY	Requires sufficient capital investment. The (financial) return depends on the quality and time of the project.	Less involvement of the client, no specific expertise required and the client can focus on his core business.	Reasonable amount of time required. Clear time planning is required to determine project budget.	Information desired outcome should be clear, but risk of keeping information can be placed with the third party.	Quality assurance can be achieved by proper specification and monitoring.
DISPOSAL WITH CONDITIONS OF SALE	Might require limited capital investment. The (financial) return depends on the quality and the book value of the property.	No specific requirements. Organizational management is left to the potential buyer.	Reasonable amount of time required. Information about desired quality well documented. Determin disposal time-frame.	Information about the desired outcome should be clear and well documented.	Quality assurance can be achieved by proper specification of the desired result.
DISPOSAL WITHOUT CONDITIONS OF SALE	The (financial) return depends largely on the book value of the property.	No specific requirements. Organizational management is left to the potential buyer.	Minimal time required. The disposal timeframe should be determined. Disposal initiated.	No specific requirements. No explicit information on the desired outcome is formulated.	The desired result of the object and therefore the desired quality is not specified.

Table 5.4 Consequences - An overview of the consequences of each of the alternatives when evaluated on the MOTIQ management aspects

5.3.3 Steps in the process

The next step is to determine in what kind of process the decision-making will take place. This section will outline the steps of adaptive reuse in order to make sure that each of the steps taken in the initiative phase are accounted for. Comparing this approach to the findings from the empirical research will validate the suggested process and use of the model.

Findings from the theoretical framework

In the theoretical framework, it was established that for decision-making to be effective, there needs to be some sort of consistency in the process. The study by Gregory et al. (2012) on SDM, was assumed to be an adequate approach for the development of the model. Where the decision context, the criteria and the alternatives are the key elements. But the other approaches described in the theoretical framework can also be regarded for the development of the process.

Mintzberg et al. (1976) identified three phases in the decision-making process. The first is the identification phase; with recognition and diagnosis of the problem, the second is the development phase; with the search for solutions, and the third is the selection phase; with screening, evaluation and authorization.

Saaty (2008) noted a similar process of decision-making. He suggested four steps. The first step is to define the problem and determine what knowledge is necessary to develop solutions, the second step is to structure the decision hierarchy with intermediate levels of criteria, all the way down to the alternatives. The third step is to construct a comparison matrix in which the criteria can be compared and the final step is to set priorities to weigh the criteria in the decision hierarchy.

What can be concluded is that in any of the decision-making processes described, herein it is assumed that the initiative phase of adaptive reuse is also a decision-making phase, there is some sort of identification, recognition of the problem and clarification of the context. Then a phase in which the different criteria are discussed and valued, in order to determine which of the specified solutions and/or alternatives would be the best.

Steps in the decision hierarchy

In the decision hierarchy, we established that there are five decision "moments", which could be translated roughly into four steps (when considering plan development to be part of the choice between adapt & hold versus disposal). While looking at the findings from the theoretical framework it is assumed that these four steps are the following: recognition, initiation, evaluation and selection. In between these steps, there is a need to research and analyse the situation in order to determine which of the possible options in the decision is most viable. The step between initiation and recognition can be regarded as the diagnosis. The step between recognition and evaluation can be regarded as the initial exploration and the step between evaluation and selection, the detailed assessment. Figures 5.5 - 5.7 offer an overview of the determination and development of the step-by-step plan.

Activities in the initiation phase of adaptive reuse

Then the question remains to what actions or activities should take place in each of these steps. In paragraph 3.4 it was determined that according to the literature the "activities" in the initiation phase of adaptive reuse included: the initiative, quick scan, exploration of function, declaration of intent and project definition. In the analysation of different examples mentioned in the empirical research, similar activities could be delineated. Even when they are not deliberately taken. The interviewees of municipality M_2, described the adaptive reuse project of the former post office. The building was regarded as historically valuable and located on a prime location. During the process, they invited market parties to sit together, without any obligations, and discuss the opportunities. Thereafter they put in an application for the change of the land-use plan, after which the object was put on the market through a tender procedure.

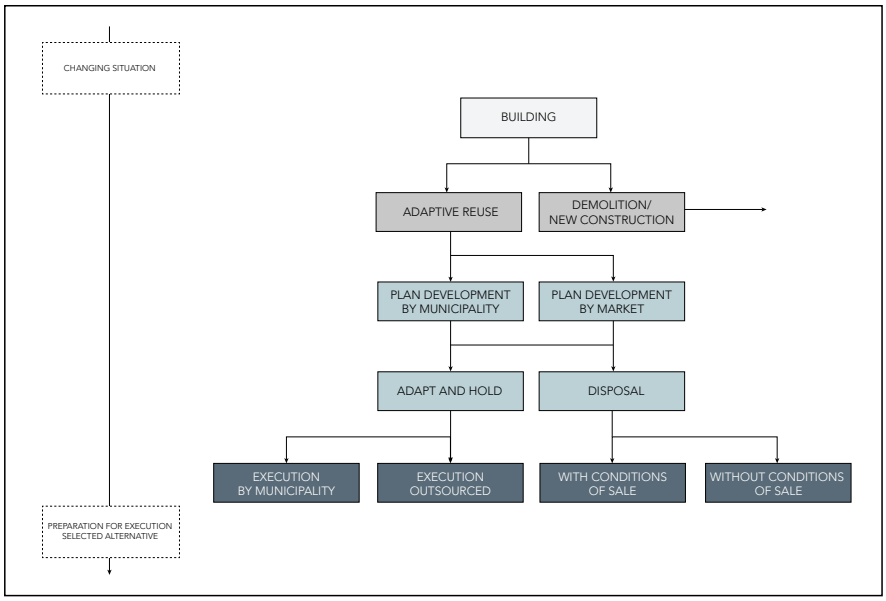


Figure 5.5 Start & End

Visual representations of the decision hierarchy and recognition of the current situation and the desired result (Own. ill.)

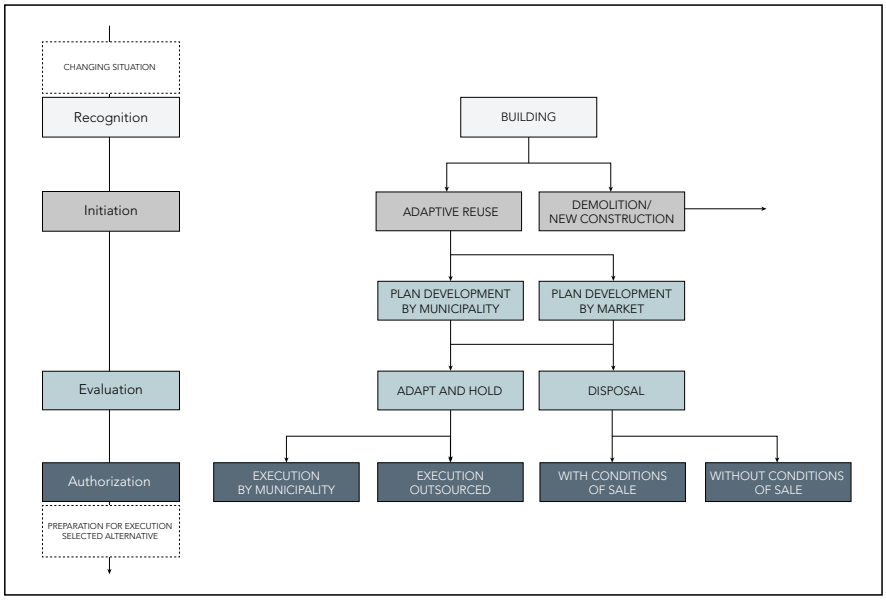


Figure 5.6 Decision moments

Visual representations of the decision hierarchy and the four decision moments (Own. ill.)

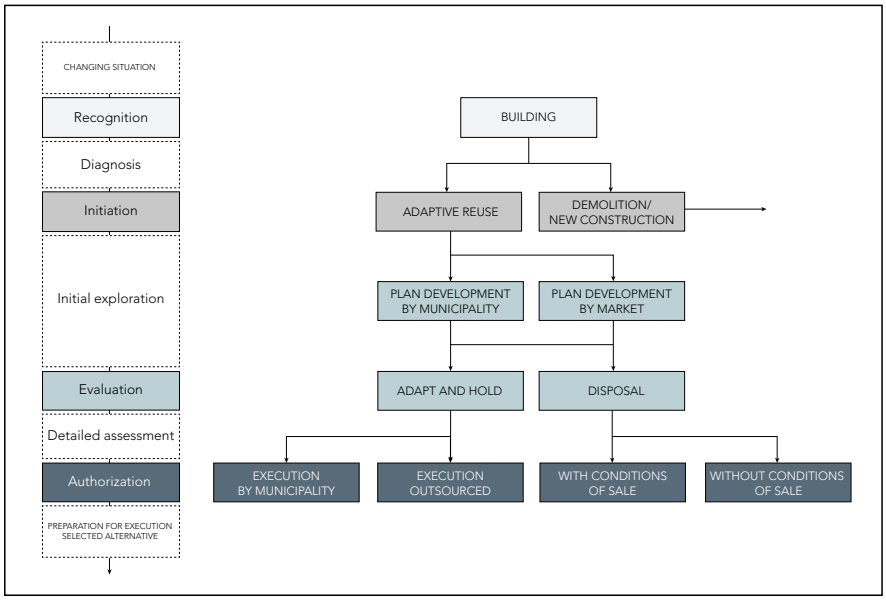


Figure 5.7 Research & Analysis

Visual representations of the moments in which research and analysis is required to make a decision (Own. ill.)

The project was initiated due to vacancy and the identified characteristics of the building resulted in an exploration of the opportunities in cooperation with market parties. By actively involving themselves in the adaptation of the land-use plan, they show their declaration of intent to the potential buyers. Where disposal through tender defined the continuation of the project.

Relating these findings to the question at hand, it is assumed that the first three activities: the initiative, quick scan and exploration of the function take place in a first phase, while the second set of activities: feasibility study, declaration of intent and project definition, take place in a second phase.

Conclusion: The step-by-step plan

From the theoretical framework and empirical research, it can be concluded that the process should consist of several steps, sub-divided into clear phases to value and compare the different alternatives. By means of the studies on SDM and the initiation phase of adaptive reuse processes, it was concluded that the two phases include: (I) identification of the decision context, (II) development and selection of alternatives.

In the first phase, recognition, diagnosis and initiation are key steps to understand the objective and identify actors. Especially the latter is important for the continuation of the process, because identification of the actors in each of the steps is necessary in order to have the correct information available in the assessment of criteria. In the second phase, the initial exploration, an intermediate authorization, detailed assessment and final evaluation and authorization are the key steps.

PHASE I

Step 1: Recognition
What triggered the initiation of the decision-making process? Identify the trigger and determine which stakeholder initiated the process.

Step 2: Diagnosis
Is the building suitable for adaptive reuse? Analyse by means of a quick scan whether the building is suitable or unsuitable for adaptive reuse.

Step 3: Initiation
Initiate adaptive reuse or demolition. In case of the former identify the actors that should be included in the assessment of the criteria. Determine the timeframe and evaluate the political context. Is it a sensible time for adaptive reuse? Perform a quick scan to determine the buildings characteristics, also with respect to the location, market, organisational objectives and financial situation. Organise a meeting with the policy departments to determine whether there is any possible function that could be accommodated in the object.

PHASE II

Step 4: Initial Exploration
Value the criteria with the identified actors to do a quick, initial exploration of the alternatives. This exploration is used to determine whether there are any alternatives or paths that can be disregarded immediately and which alternatives should be considered in the detailed assessment.

Step 5: Evaluation & Authorization
What was the outcome of the previous step? Present this to the city council and see if it meets the requirements.

Step 6: Detailed assessment
Value the criteria with the identified actors to do a more detailed assessment of the alternatives. This assessment is used to determine which of the alternatives would fit best within the context of that specific decision.

Step 7: Evaluation & Authorization
What was the outcome of the previous step? Present this to the city council and see if it meets the requirements.

Figure 5.8 Step-by-step plan - An overview of the suggested step-by-step plan used to organise the process. (Own ill.)

5.4 Decision criteria

The final step in the development of the tool is defining the decision criteria. Herein it is important to determine both quantifiable as well as the "hard-to-quantify" values (Gregory et al., 2012). According to Saaty (2008) it is that through intermediate levels with criteria and sub-criteria one can systematically structure the decision hierarchy all the way down to the lowest level with alternatives. This section will therefore clarify the decision criteria by outlining the following aspects:

- The list of criteria based on the research;
- Defining the type of tool;
- Key criteria in the decision-making process;
- Sub-criteria in the decision-making process.

5.4.1 Devising a list of criteria

In chapter 3.4, an overview was given of the criteria found in literature regarding adaptive reuse and real estate management decision-making. These criteria were then analysed and weighed on their relative importance by means of the empirical research. By comparing the findings from the perspective of the municipal organisation (through the qualitative interviews) and external advisors (through the expert meeting) an overview of key and sub-criteria is sought.

Analysis of the two perspectives

Where the perspective on the decision, regarding adaptive reuse, might differ between municipal employees and external consultants it is interesting to analyse the similarities and differences. Furthermore, the analysis contributes to the validation of the final set of criteria. Tables 5.5 and 5.6 present the outcome of the analysis.

The overview given in table 5.5 shows the relative importance of each of the factors to which the criteria are linked. Herein one can see that when looking at overall factors one can assume that in the decision-making process, the most important factor is that of function (22%), followed by market (17%), organisation (16%), location (16%) and finance (13%). While legality (9%) and building criterion (7%) are believed to be of less importance relative to the other factors.

Qualitative interviews	Expert meeting	Total
22 % Function	23 % Function	22 % Function
17 % Market	20 % Finance	17 % Market
15 % Organisation	18 % Location	16 % Organisation
15 % Location	18 % Market	16 % Location
13 % Legality	16 % Organisation	13 % Finance
10 % Finance	5 % Building	9 % Legality
8 % Building	0 % Legality	7 % Building

Table 5.5 Main factors - Results of cross-case analysis of relative importance overall factors

In table 5.6, one can see the top 12 criteria when weighing both the outcome of the qualitative interviews equally to the outcome of the expert meeting. Overall, 'municipal policy' (90%) is regarded by both the interviewees and experts as important to the process. This also applies to 'market conditions' (70%), 'staff capabilities' (68%) and 'political context' (66%).

Qualitative interviews		Expert meeting		Total	
100 %	Eligible function	100 %	Strategic purpose	92 %	Strategic purpose
100 %	Market conditions	80 %	Municipal policy	90 %	Municipal policy
100 %	Municipal policy	60 %	Urban masterplan	70 %	Market conditions
92 %	Planning constraints	60 %	Staff capabilities	68 %	Staff capabilities
92 %	Political context	40 %	Representativeness	66 %	Political context
83 %	Strategic purpose	40 %	Liveability	60 %	Eligible function
83 %	Location within the city	40 %	Benefit-cost ratio	58 %	Benefit-cost ratio
75 %	Benefit-cost ratio	40 %	(Occupier) demand	54 %	Marketability
75 %	Staff capabilities	40 %	Market conditions	52 %	Location within the city
67 %	Marketability	40 %	Marketability	49 %	Liveability
67 %	Risk	40 %	Political context	47 %	Urban masterplan
58 %	Liveability	40 %	Community participation	46 %	Planning constraints

Table 5.6 Main criteria - Results of cross-case analysis of top 12 criteria

One striking difference between the qualitative interviews and the expert meeting is that the municipalities regarded the 'eligible function' as one of the most important determinants in the decision-making process. While the 'eligible function' is not within the top 12 of criteria of the expert meeting. However, the experts do mention 'strategic purpose' as an important criterion. One can assume that the experts feel that it is not so much the function or activity that is important, but rather the way in which it can be used strategically by the municipality. It is however arguable how practical it is for the municipality to only look at the strategic purpose of a function. 'Location within the city' was also regarded as important by the interviewees (83%), but not mentioned by the experts. The experts did mention the 'urban masterplan' (60%) as an important criterion, which could be assumed to be a translation of the vision, regarding a certain location within the city. Arguably this criterion was mentioned by the experts, because, within their work as consultants, they will often use the urban masterplan or municipal vision in their own analyses.

Criteria in the top 12 according to the experts, that are not in the top 12 of the qualitative interviews include: 'representativeness', '(occupier) demand' and 'community participation'. On the other hand, 'risk' was mentioned several times in the interviews, while not being mentioned that often by the experts.

5.4.2 Defining the type of tool

Each of the criteria found, should be incorporated in the process in a coherent and clear manner. This section will outline and argue what type of tool would fit best in the described process.

Findings from the theoretical framework

In chapter 3.5, an overview was given of existing models that had been studied and analysed. Three of them are included in this report. Overall, four different types of models or tools could be identified. These included: the checklist, the flowchart, the comparison matrix and the MCD model.

The first is the checklist. In basic terms, this is quite a simple model where in each of the steps certain questions facilitate the valuation of the object. The answer to those questions is either yes or no. The 'Transformatiemeter' is one of these models. The instrument developed is based upon several checklists from which in various steps, from global to detailed, the office buildings are assessed on their adaptive reuse potential to housing (Geraedts & Van der Voordt, 2002).

The second is the flowchart. By answering several closed questions a certain path through the flowchart is taken. The adaptive reuse model for religious heritage developed by Hendriks (2008) was based on the flowchart approach. The model described seven steps each with their own set of sub-questions that needed to be answered to determine the next step.

The third is the comparison matrix. By valuating several criteria, prescribed options can be valued and compared. Both the ABC-scan and ROP model are based on the comparison matrix. The main aim of the ROP model is to increase awareness on the options and spark conversation within the organisation as well as with other parties.

The fourth is the mathematical multi-criteria decision model (MCD-model). This model can be compared to a benchmark approach, were through different criteria a building or alternative can be ranked. The ARP model is one of the examples in which multi-criteria decisions is used. The algorithms in the model offer the opportunity to quickly scan and rank a portfolio or set of alternatives.

Comparison to empirical research

In the case studies, several tools were identified that are currently being used or are planned to be used in MREM. These tools included decision trees and flowcharts, but one of the most reoccurring tools was that of the comparison matrix. In many forms, like the score matrix, the score card (model) and the policy framework, each of the matrixes consisted of a set of criteria. But neither one of them is decisive. The value of each of the criteria would be regarded in consideration of the context or a certain objective.

This shows that, in practice, there is often not one objective that is critical for the decision. Decisions are not exclusively based on one criteria, for instance the financial return, but on several other factors at the same time. The experts however did stress that one of the challenges is rigidity. The tool should not be too rigid and leave some flexibility in the application. Defining a tight process could be positive for the consistency, but leaves little room for change and personal interpretation. Which are two factors that are important in the current changing world.

Conclusion: Comparison matrix as tool in the decision-making process

In determining what approach would be best suitable for this tool, it is necessary to determine the function of the model. In paragraph 5.1 it was noted that the purpose of the tool is to provide the means to coherently make fitted and transparent decisions. Within these decisions, it is important that the indicators should be assessed simultaneously, as one indicator does not immediately outweigh another. The tool should therefore facilitate the comparison of different sets of criteria at different points in the decision hierarchy.

The comparison matrix, which was also suggested by Saaty (2008) and CPI and Aedes (2014), in combination with several guiding questions, is assumed to be the most appropriate. First, because the matrix offers opportunity to integrate the steps identified in the previous paragraph. Second, because valuation and weighing of criteria can be done simultaneously. While in a flowchart one criteria would automatically determine the next step and a checklist or mathematical multi-criteria decision model is more appropriate for criteria with tangible values. The comparison matrix is also the most appropriate when using it for discussion, because values are debatable and can easily be considered relative to other criteria.

5.4.3 Key criteria

After analysis of the results described in the previous sub-paragraphs, and discussions with the consultants at ICSadviseurs. Seven criteria have been selected as key criteria in the comparison matrix. These include eligible function, marketability, strategic purpose, management strategy, initiative and benefit-cost ratio. Each criterion will be shortly discussed and explained in correspondence with the alternatives.

Eligible function	
Definition	Whether a future function for the building has been determined and what kind of function it entails.
Question	Is there an indication of an eligible function that could be accommodated in the object?
Correspondence to alternatives	Many of the interviewees indicated that the 'eligible function' is most the important criterion. This is because they do not intend to manage real estate for the object, but for the activity that takes place within the object. According to the interviewee in case L_1, the legal obligation for accommodating a function is sufficient to determine that the object should remain within the portfolio. They refer to this as their core portfolio, which correlates to the option to hold & adapt. When the new function is not supportive to municipal policies or undetermined (after deliberation with the policy departments), the municipality should not hold the object, but dispose of it, because it is regarded as non-core. In any of the other situations, the plan development will most likely be done by the municipality because it is for internal use or complies with municipal policies, but further consideration is depended upon the marketability.

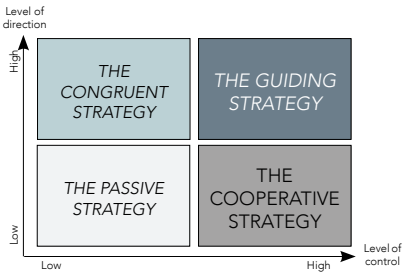
Marketability	
Definition	An objectified judgement to establish whether the object would be easy to sell or more difficult to sell.
Question	Would the market be willing to adapt the building? Would the market be willing to facilitate the function?
Correspondence to alternatives	According to Hoevelaken (2015, p. 50), "[…] the greater the marketability, the lower the risk of the real estate object". In defining the marketability one evaluates the building briefly on several aspects. The building is positively marketable when: there is a limited supply on the market, good location with useful function, future use is according to the land-use plan, offers potential return and is of attractive architecture. The building is reasonably marketable real when: there is competitive supply on the market, there is a demand for adaptive reuse, good location, there is a need for a change in land-use plan, physical characteristics offers adaptive reuse potential. And the building is ambitious marketable when: the real estate market is declining, regional population is declining, land-use plan needs to be adapted to facilitate future use, but there are limited possibilities for adaptive reuse. According to the interviewees, a function should not be accommodated by the municipality when the market shows interest in accommodating the function. But when the building is ambitiously marketable or reasonably marketable this could influence the overall marketability of the building. Therefore, one needs to consider both the marketability of the building as well as that of the function.

Strategic purpose

Definition	The degree to which the object could be of strategic use to build a future proof portfolio.
Question	Does the object hold any future strategic purpose? Is ownership required?
Correspondence to alternatives	This criterion was not mentioned in literature, but was indicated by several of the interviewees as important. They believed that considering objects more strategically helps to build a future proof portfolio. Many municipalities already recognize strategic purpose in their MREM proceedings. Some specifically label strategic real estate in order for it to be kept within the portfolio. In the score matrix of case L_3 strategic purpose was one of the aspects used to value the social return of the object. Similarly, in case M_6 the portfolio was analysed on several performance criteria which included the outlining of any strategic development opportunities for the future. According to the interviewee of case L_2, the strategic purpose is one of the elements contributing to the social return of an object. When an object has any strategic purpose, it is therefore important to keep the object within the portfolio or consciously dispose of the object, possibly with conditions of sale.

Management strategy

Definition	The willingness to take control over proceedings or give direction to initiate development.
Question	How much control and direction is intended to be taken?
Correspondence to alternatives	The four generic management strategies as identified in the theoretical framework, range from active to passive strategies, based on the amount of control and direction. These strategies include: the guiding strategy, the congruent strategy, the cooperative strategy and the passive strategy. The management strategy was not mentioned in the top 12 criteria in the previous paragraph, but the overall perspective on the management strategy was in especially the smaller municipalities a large determinant in further proceedings. The real estate teams in the municipalities were ordered to minimize direction and control as much as possible. Which would for them automatically result in a passive strategy where disposal of the object is the favourable option. The guiding strategy stipulates that much control is taken and direction is given, which correlates with the execution of the work by the municipality. The congruent strategy stipulates much direction, but less control, which correlates with the plan development by the municipality. The cooperative strategy stipulates much control, but less direction, which correlates with the plan development by the municipality. The passive strategy stipulates minimum control and minimum direction, which correlates with disposal of the object.



Initiative	
Definition	Whether there was an initiative at the start of the process.
Question	Was the process initiated by the municipality or by the market?
Correspondence to alternatives	This criterion was not mentioned in literature, but was indicated by several of the interviewees as important. When the adaptive reuse is initiated by the municipality, the plan development is subsequently executed by the municipality. It however does not mean that they should hold the object. When it regards a market initiative, the plan development will most likely be done by the market and the object will be sold. If there is no immediate initiative and plan, there is no preference for either of the alternatives. In case M_1 for instance, the adaptive reuse of several buildings was initiated by a group of neighbouring residents. This led to the disposal of the object, because the residents showed initiative to host a certain public function in the vacant buildings. Similarly, the interviewee in case M_5 expressed the municipal's wish to put more focus on initiatives from residents, especially regarding sustainable solutions.

Benefit-cost ratio	
Definition	The degree to which the benefits outweigh the costs and whether this is in line with objectives.
Question	Does the public benefit of the object outweigh the costs?
Correspondence to alternatives	According to Tiesdell et al. (1996, cited in Langston et al., 2008) "[…] a focus on monetary issues alone will lead to bias in decision-making. The identification of value for money on development projects is indeed commonly related to monetary return. But other issues are also relevant". Yung and Chan (2012) continue this notion by stating that economic efficiency can only be achieved when the benefits of the project outweigh the costs. In case L_1, the interviewees portray a similar view when they state that the municipality is different from private developers, because their focus is not solely on high financial returns, but on creating social value. It is however still important to consider financial aspects like the net operating income and book value. When the financial return is positive and there are numerous benefits, this automatically means that the object should be kept within the portfolio. When the financial return is positive, but the benefits are minimal, the municipality should try to dispose of the object. Adaptive reuse should not be initiated with the objective of a developer. When the financial return is negative, but there are numerous benefits. The benefits could outweigh the costs. According to the interviewee in case L_1, financial loss could be tolerated when it concerns an object that contributes to the area. It however does not correlate directly with one of the alternatives, except that the municipality will want to have an influence on the preservation of the benefits. When the financial return is negative and benefits are minimal, this correlates with the disposal alternative.

Conclusion: Comparison matrix 1

From the findings from the theoretical framework and the empirical research, it can be concluded that there are six criteria that are most important in the decision regarding adaptive reuse of municipal real estate. These six criteria should be the first to considered in the process.

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
ELIGIBLE FUNCTION	Is there an indication of the function that could be accommodated in the object?	A	Yes, and the municipality has a legal obligation to accommodate the function;						
		B	Yes, the new function regards municipal office space;						
		C	Yes, the new function is supportive to municipal policies;						
		D	Yes, but the new function is not supportive to municipal policies;						
		E	No, the new function is not determined.						
MARKETABILITY	Would the market be willing to adapt the building?	A	The building is ambitiously marketable;						
		B	The building is reasonably marketable;						
		C	The building is positively marketable.						
	Would the market be willing to facilitate the function?	A	The function is ambitiously marketable;						
		B	The function is reasonably marketable;						
		C	The function is positively marketable.						
STRATEGIC PURPOSE	Does the object hold any future strategic purpose?	A	The object has a strategic purpose with regard to the function.						
		B	The object has a strategic purpose with regard to possible (re)development(s) of the area;						
		C	The object has a strategic purpose with regard to financial aspects. It is financially more attractive to hold on to the object (e.g. because of the current market, net operating income, long term objective);						
		D	The object has a strategic purpose with regard to the municipal portfolio. It provides flexibility in case of population growth or shrinkage;						
		E	There is no indication of any (future) strategic purpose.						
	Is ownership required?	A	Ownership is required;						
		B	Neutral;						
		C	Ownership is not required.						
MANAGEMENT STRATEGY	How much control and direction is intended to be taken?	A	The guiding strategy;						
		B	The congruent strategy;						
		C	The cooperative strategy;						
		D	The passive strategy.						
INITIATIVE	Was the process initiated by the municipality or by the market?	A	Yes, internal (municipal) initiative;						
		B	Yes, market initiative;						
		C	No internal or market initiative, process was triggered by obsolescence.						
BENEFIT / COST RATIO	Adaptive reuse of the object will result in a:	A	High social return;						
		B	Some social return;						
		C	Limited social return.						
	The expected net operating income after adaptive reuse will be:	A	Positive;						
		B	Neutral;						
		C	Negative.						

Figure 5.9 Comparison matrix 1 - Visual representation of the comparison matrix used in step 4, the initial exploration.

5.4.4 Sub-criteria

In addition to the key criteria, there are also several sub-criteria that can be identified. These sub-criteria are used to make a more detailed analysis of the object when choosing one of the decision alternatives. Ten criteria have herein been selected. Each criterion will be shortly discussed and explained in correspondence with the alternatives.

Sub-criteria related to the building characteristics
Two of the sub-criteria related to building characteristics are identified as being a factor in the decision-making process. These include: representativeness and historical and/or cultural value.

Representativeness	
Definition	The image-determining, aesthetic value of the object that could hold a certain sense of representativeness for the city.
Statement	The object has an image-determining, aesthetic value that holds a certain sense of representativeness for the city.
Correspondence to alternatives	The representativeness of a building linked to social significance and historical value is important for the identity of the city (Bullen & Love, 2011a). It is argued that the (commercial) performance of buildings is influenced by the net operating income, occupancy rate, but also the aesthetic appearance (Bullen & Love, 2011b). The interviewee in case M_6, stated that they are currently involved in the adaptive reuse of a military campus. Part of the buildings will be sold to market parties with the intention of adaptive reuse, but some will remain within the portfolio of the municipality. One of them functions as a defining mark in the area. It is image-determining and representative for the area. They therefore decided to adapt the building themselves. Another similar building was disposed of with conditions of sale. An aesthetic building is therefore a legitimate reason for opting to hold the object or otherwise dispose of the object with conditions of sale.

Historical and/or cultural value	
Definition	Historical or cultural values that could press the importance of careful preservation.
Statement	The object has historical and/or cultural value that should be preserved.
Correspondence to alternatives	This could relate to building with or without an official monumental status. Strumiłło (2016) argues that revitalization of historic and cultural important buildings has the chance to retain unique atmospheres and townscape characters. Langston et al. (2008) continue this notion by arguing that older buildings can sometimes provide social benefits. "They add to a sense of community and are often appreciated as comfortable working environments by occupants". This was also acknowledged by the interviewees, which leads to the assumption that a building with historical and/or cultural value is best kept within the portfolio or disposed of with conditions of sale.

Sub-criteria related to the location

The location within the city relative to other functions and urban structures. The location of the object within the city relative to other functions and urban structures is an important determinant because it has an effect on the viability of the project (Langston et al., 2008; Yung & Chan, 2012).

Two of the sub-criteria related to the location are identified as being a factor in the decision-making process. These include: liveability and the urban masterplan.

Liveability	
Definition	The degree to which the object contributes to the liveability and social cohesion of the area.
Statement	The object and/or possible future function contributes to the liveability of the area.
Correspondence to alternatives	Adaptive reuse offers the chance for historical and important building to retain their unique atmosphere and character and become a testimony for future generations. It also improves living conditions and increases overall standards of the city (Strumiłło, 2016). It was noted that the main objective of municipal real estate management is to balance interest and contribute optimally to a liveable community (Van den Beemt-Tjeerdsma & Veuger, 2016). Contributing to the liveability of the city is therefore a legitimate reason for option to hold the object or otherwise dispose of the object with conditions of sale. In case L_3, the interviewee noted that within decisions they look at the positive social and financial return. Of which liveability has been identified as one of the criteria for a positive social return. An object that contributes to a liveable area is therefore a reason to hold on the object or handle it with care.

Urban masterplan	
Definition	Whether the object is upon a location of interest, which has been described in the urban masterplan or municipal vision and subsequently has been given a certain direction by the municipal council.
Question	Is the object located in an area described in the urban master plan?

Correspondence to alternatives	In the political context, the urban masterplan is according to literature of importance (Conejos et al., 2011). In case M_1, the interviewee argued that when an object is located central within a residential area, there is more willingness from the municipality to invest in it. This was acknowledged by the interviewees in case M_2 and M_6 as well, who stated that the location in relation to its surroundings is one criteria being considered in the decision to hold or dispose of the object. It is therefore assumed that a location or interest (described in the urban masterplan) correlates to the willingness to hold the object and invest in adaptive reuse, or to make sure that the qualities of the location are maintained by selling with conditions. A poor location with no significant potential therefore does not hold any value for the municipal portfolio and sale without conditions will be sufficient.

Sub-criteria related to risk

According to Cooper & Chapman (1987, cited in Gehner & Hobma, 2010, p. 392), risk is "[…] the exposure to the possibility of economic and financial loss or gain, physical damage or injury, or delay as a consequence of the uncertainty associated with pursuing a particular course of action". A building project is never without risks. Adaptive reuse ventures are "perceived" as risky, because unknown work, scope changes, compatibility of materials, decanting of occupants, design and information constraints could affect the success of the project (Bullen & Love, 2011b; H. T. Remøy & Van der Voordt, 2007; Shipley, Utz, & Parsons, 2006). Geltner et al. (2001) notes that every investor dislikes risk. The municipal real estate department is no different. They will prefer less risky investments. Therefore, it is important for each party to be aware of the risks involved, to realize how these risks can be managed and to decide if they are willing to bear these risks (Gehner & Hobma, 2010).

Within the traditional Dutch organisational model (Design & Execution) the client will have a lot of influence on the process, but will also hold the risk for plan development and exploitation (Geraedts, 2010). When choosing a different organisational model, more risk can be transferred to a third party. Adapting the building within the portfolio will therefore bring about more risks, where executing the work themselves is potentially riskier than having the work executed by a third party. And in case of disposing of the object, the sale with conditions is assumed to be slightly riskier, because this restricts the buyer somewhat, which could lead to a more difficult sales trajectory.

Four of the sub-criteria are identified as being a factor in the risk profile of the project. These include: size, complexity, timing and staff capabilities.

Size	
Definition	The size of the project based on the financial commitment.
Question	The expected financial investment of the project is?
Correspondence to alternatives	According to Geltner et al. (2001), size is one of the concerns when regarding the structure of an investors real estate portfolio. It is one of the factors that influences the choice when regarding organisational models for execution of the work. Adaptive reuse could be financially unfavourable for municipalities, because financial participation is riskier. Less is known about the (hidden) costs of the project and there is often no certainty in whether income can be generated from a user after adaptive reuse, while it still requires a large upfront investment in most cases (Bullen & Love, 2011). It is therefore assumed that for large projects with high financial commitments the project is best left to the market.

Complexity	
Definition	The perceived and expected complexity based on the identified aspects that influence the project (in)directly.
Question	What is the expected complexity of the project?
Correspondence to alternatives	Complex, large scale projects can bring about major unexpected risks (Geraedts, 2010), demanding a significant commitment from the "client". It is therefore assumed that for complex projects the execution is best outsourced to a third party or risks are shared with a partner.

Staff capabilities	
Definition	The amount of available staff with an indication of their capabilities and expertise.
Question	What are the capabilities and experience of the employees?
Correspondence to alternatives	Adaptive reuse requires investing in man-hours, knowledge and skills (NPH, 2011; Yung & Chan, 2012). It is argued that "professional" clients, with the expertise and capacity will want to play an important role in the different phases of the adaptive reuse project. Whereas other clients with no or lesser experience are more willing to be assisted by external advisors or put risks with a third party (Geraedts, 2010). It is therefore assumed that the more expertise the available staff have, the more they will want to do themselves, which correlates with the alternative of executing the work themselves. While at the other end of the spectrum, there will be more willingness to have the work executed by a third party. This was also mentioned in case L_3, where the interviewee stated that one of the reasons they do execute adaptive reuse is that they feel they have enough expertise and knowledge to take on adaptive reuse projects.

Timing	
Definition	The timing and time horizon of the project.
Question	Would the adaptive reuse project fit within the current political context and departmental planning?
Correspondence to alternatives	A project of adaptive reuse requires time, which could result in a stretch over different political "periods". The changing political "colour" of the municipality that occurs every four years influences policies and implementation of the project as priorities might switch (NPH, 2011). The time horizon could affect the ability to bear risk and the need for flexibility in the portfolio (Geltner et al., 2001). When there is limited time available a quick sale without conditions could be regarded as the best option, whereas availability of time would fit with execution of the work by the municipality.

Sub-criteria related to the organisation

Two of the sub-criteria related to organisational aspects of the project are identified as being a factor in the decision-making process. These include: planning constraints and partnership.

Planning constraints

Definition	The public law instruments and spatial planning procedures that need to be considered during the process.
Statement	The current planning constraints are sufficient to ensure the preservation of the values.
Correspondence to alternatives	The regulations are often perceived as one of the main barriers in adaptive reuse (Bullen & Love, 2011b, 2011c; Shipley et al., 2006; Yung & Chan, 2012), but for the municipality with excellent knowledge of procedures they should be able to use the planning constraints to their advantage.

Partnerships

Definition	The option to form a partnership with a market or public organisation.
Question	Is there an opportunity for a partnership with a market party or other public organisation?
Correspondence to alternatives	Adaptive reuse requires a different approach from the municipality than with traditional real estate development or granting subsidies. Collaborating with entrepreneurs, developing new business models, looking for smart financing forms and solving all kinds of architectural problems requires well-appointed processes. In practice, cooperation with market parties and the involvement of residents often appears to be difficult (Haarmann et al., 2015). The municipality has an overview of market demand and supply to facilitate cooperation between parties (NPH, 2011). When a potential partnership arises, it is assumed that the municipality should then opt to dispose of the object.

Conclusion: Comparison matrix 2

From the findings from the theoretical framework and the empirical research, it can be concluded that there are ten sub-criteria in the decision regarding adaptive reuse of municipal real estate. These ten criteria may be considered in the process.

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
REPRESENTATIVENESS	The object has an image-determining, aesthetic value that holds a certain sense of representativeness for the city.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
HISTORICAL AND CULTURAL VALUE	The object has historical and/or cultural value that should be preserved.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
LIVEABILITY	The object and/or possible future function contributes to the liveability of the area.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
URBAN MASTERPLAN	Is the object located in an area described in the master plan?	A	The object is located in an area described in the urban masterplan or municipal vision. This has implications on the future of the building;						
		B	The object is located in an area described in the urban masterplan or municipal vision. However, this has no implications on the future of the building;						
		C	The object is not located in an area described in the urban masterplan or municipal vision.						
SIZE	The expected financial investment of the project is?	A	High;						
		B	Medium;						
		C	Low.						
COMPLEXITY	What is the expected complexity of the project?	A	High complexity;						
		B	Some complexity;						
		C	Low complexity.						
STAFF CAPABILITIES	What are the capabilities of the employees?	A	Sufficient employees and expertise available;						
		B	Sufficient employees available, but there is less expertise on the matter;						
		C	Sufficient expertise, but there are less employees available;						
		D	There is a minimum amount of expertise and employees available;						
		E	Expertise and/or staffing is available through an external advisor.						
TIMING	Would the adaptive reuse project fit within the current political context and departmental planning?	A	Yes;						
		B	No.						

Figure 5.10 Comparison matrix 1 - Visual representation of the comparison matrix used in step 4, the initial exploration.

6 CONCLUSION

Adaptive reuse is often not a clear-cut process and the successful implementation of adaptive reuse comes with several big challenges. The added complexity contributes to it being almost always unique. As owner of a considerable amount of real estate, the municipality is one of the actors in the built environment that could initiate and facilitate the implementation of adaptive reuse. However, the extra challenges posed upon the municipality make it difficult to set up a process and initiate adaptive reuse, as it is unclear what the options are. In addition, it is arguable whether executing adaptive reuse should be part of their task description at all. There are numerus risks and commitments that could oppose the multiple responsibilities they face as a public authority. Furthermore, when opting to dispose of the object it remains the question to what would be the best manner to dispose of these objects without losing value, tangible as well as intangible.

The aim of this research was to identify the criteria that should be considered during the initiation phase of adaptive reuse, and outline a decision-making tool that provides the real estate department of the municipality with the means to make concise and justifiable decisions. The first part of the research was focused on analysing the context. The factors that influence the way in which municipal real estate strategies are formulated and implemented. The second part was focused on analysing adaptive reuse as real estate strategy and how a structured decision-making process could be developed.

6.1 Answering the main research question

Based on the theoretical framework and the empirical research it was concluded that in principal there are four alternative solutions regarding adaptive reuse within the municipal portfolio: (1) execution of the work by the municipality, (2) execution of the work by a third party, (3) disposal of the object with conditions of sale and (4) disposal of the object without conditions of sale.

The initial conclusion on adaptive reuse from the perspective of the municipality is that adaptive reuse, as a developing strategy, should not be part of the core tasks of the municipality. When analysing the different management strategies in the empirical research, it could be concluded that most of the municipalities have the tendency to adopt the cooperative management strategy. Which would be consistent with the trend of reduced direct government involvement. Herein the municipality seeks a more controlling and facilitating role in which collaboration with market parties is welcomed. This notion suggests that there is an important role for the municipality as a facilitator and moderator in adaptive reuse projects. However, there are certain conditions under which adaptive reuse might still be considered, and situations in which the municipality has the tendency to take more control and give more direction in the outcome of the project. The research therefore ultimately aimed to answer the following main question: What criteria need to be considered when deciding upon adaptive reuse within the real estate portfolio of municipalities?

Deriving out of the findings from the theoretical and empirical research a set of key and sub-criteria could be identified. The key criteria to take into consideration during the decision-making process include: the eligible function in relation to the municipal policy and marketability of the object and/or function. The strategic purpose of the object. The overall management strategy for implementing actions. The notion to whether there is an initiative from the market or public, and the benefit/cost ratio.

Eligible function

This criterion can be defined as, the consideration to whether a future function for the building has been determined and what kind of function it entails. In the empirical research, it was concluded that many of the interviewees indicated the 'eligible function' as one of the most important criterions. This is because they do not intend to manage real estate for the object, but for the activity that takes place within the object. Ownership of real estate is no goal per

se, but municipal real estate can be used as an instrument to contribute to the achievement of public goals. The eligible function is therefore an important criterion, because the future use of the building determines for a large part whether the municipality will hold on to the object or will strive to dispose of it. They feel that they should not accommodate functions that do not necessarily have to be provided with public money.

Marketability
This criterion can be defined as an objectified judgement to establish whether the object would be easy to sell or more difficult to sell. In defining the marketability one evaluates the building briefly on several aspects related to the building characteristics and the function. What can be concluded from the findings is that e.g. a function should not be accommodated by the municipality when the market shows interest in accommodating the function. However, the decision is not always unambiguous. When the building, with regard to the building characteristics, is ambitiously marketable or reasonably marketable this could influence the overall marketability of the building.

Strategic purpose
This criterion can be defined as the degree to which the object could be of strategic use. The goal of municipal real estate management is to align the portfolio to the needs of the municipal organisation as well as the governmental policy goals, with the aim to balance strategic, functional and financial interests and contribute to a liveable community. From the empirical research, it was concluded that many interviewees believe that considering objects more strategically helps to build a future proof portfolio and contribute to the social return of the object. When an object has any strategic purpose, it is therefore important to keep the object within the portfolio or consciously dispose of the object.

Management strategy
This criterion can be defined as the willingness to take control over proceedings or give direction to initiate development. The four generic management strategies, as identified in the theoretical framework, give an indication of how the municipality seeks to implement actions. The guiding strategy stipulates that much control is taken and direction is given, which correlates with the execution of the work by the municipality. Whereas, on the other side of the spectrum, the passive strategy stipulates minimum control and minimum direction, which correlates with disposal of the object. Knowing what management strategy is preferred helps to develop a greater understanding of the reason behind certain actions and creates awareness amongst the actors.

Initiative
This criterion can be defined as the consideration to whether there was an initiative at the start of the process. In the 21st century one can see a new trend that influences governmental proceedings. It is argued that public functions are no longer exclusively government domain. Actors from various public authorities intervene in the policy and decision-making, seeking co-production of public management. These trends also apply to adaptive reuse and especially then, one can see that the municipalities seem to be quite supportive to public initiatives. Initiatives from the market or public should therefore be taken into consideration and encouraged.

Benefit-cost ratio
This criterion can be defined as the degree to which the benefits outweigh the costs and whether this is in line with objectives. It was argued that a focus on monetary issues alone will lead to bias and is inconsistent with the municipal objective of contributing optimally to a liveable community. Within the empirical research, it was argued that the municipality should

focus on tangible as well as intangible values. What does the object mean to society? Which values are of importance to the municipality? Adaptive reuse should not be initiated from the objective of a developer. When the financial return is negative, but there are numerous benefits, the benefits could outweigh the costs.

In addition to the key criteria, several sub-criteria could also be identified which help to make a more detailed assessment of the object at hand. These sub-criteria include: size of the project, complexity, staff capabilities, timing, planning constraints, partnerships, representativeness of the building, historical and cultural value, liveability of the area and compliance with the urban masterplan. Overall, one can discern that these sub-criteria focus on three aspects of the decision. Some of the criteria are focussed on formulating a risk profile, like the complexity and staff capabilities. It is important for the municipality to understand the size of the project and how this correlates with what they can handle as organisation. Other sub-criteria focus on location and building characteristics, these criteria seek to determine whether there are any valuable characteristics that need to be preserved. Finally, there are some sub-criteria that focus on the organisational objectives of the project. Looking at the regulations that frame the work and whether or not there would be a possible collaboration with private parties.

6.2 Placing the decision criteria within the decision context and decision process

When researching the criteria that need to be considered, it was concluded that merely describing and valuating the criteria does not lead to a structured decision. The criteria have to be embedded into a structured and coherent decision-making process, while taking into account the context in which the decision takes place.

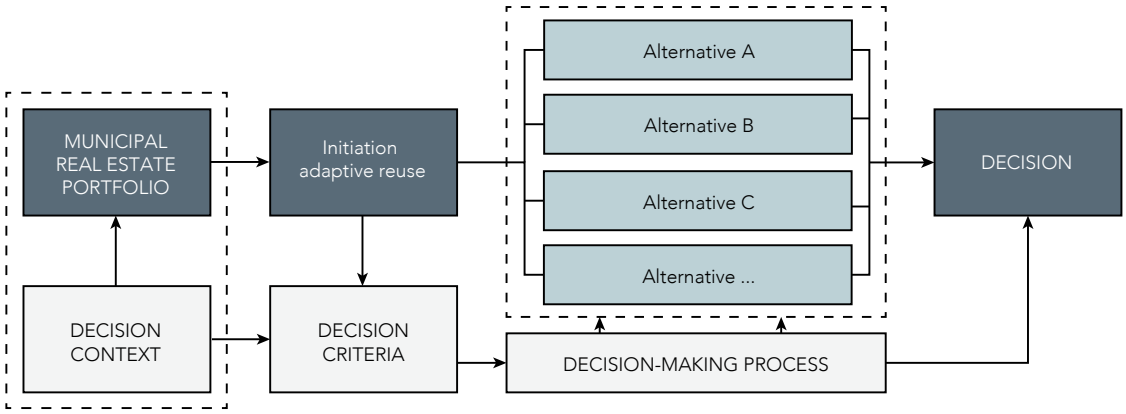


Figure 6.1 Conceptual framework

Devising tools and matrixes to structure decision-making and evaluate the performance of the objects in the portfolio was a trend well visible in the empirical research. Score card models, decision trees, policy frameworks and score matrixes are employed to gain a quick and visual insight in the performance of the object. Each of these tools were used to determine whether the object should remain within the municipal portfolio or be prepared for disposal. What can be concluded is that there is a positive attitude towards the use of decision-making tools. It was however also noted that in developing a decision-making tool, it should not be too rigid. Leaving room for personal interpretation and adjustment to the changing context, is key in the development of a more dynamic process. The comparison matrix, as being one of the analysed tools, offers opportunity to value and weigh criteria simultaneously. The findings

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
ELIGIBLE FUNCTION	Is there an indication of the function that could be accommodated in the object?	A	Yes, and the municipality has a legal obligation to accommodate the function;						
		B	Yes, the new function regards municipal office space;						
		C	Yes, the new function is supportive to municipal policies;						
		D	Yes, but the new function is not supportive to municipal policies;						
		E	No, the new function is not determined.						
MARKETABILITY	Would the market be willing to adapt the building?	A	The building is ambitiously marketable;						
		B	The building is reasonably marketable;						
		C	The building is positively marketable.						
	Would the market be willing to facilitate the function?	A	The function is ambitiously marketable;						
		B	The function is reasonably marketable;						
		C	The function is positively marketable.						
STRATEGIC PURPOSE	Does the object hold any future strategic purpose?	A	The object has a strategic purpose with regard to the function.						
		B	The object has a strategic purpose with regard to possible (re)development(s) of the area;						
		C	The object has a strategic purpose with regard to financial aspects. It is financially more attractive to hold on to the object (e.g. because of the current market, net operating income, long term objective);						
		D	The object has a strategic purpose with regard to the municipal portfolio. It provides flexibility in case of population growth or shrinkage;						
		E	There is no indication of any (future) strategic purpose.						
	Is ownership required?	A	Ownership is required;						
		B	Neutral;						
		C	Ownership is not required.						
MANAGEMENT STRATEGY	How much control and direction is intended to be taken?	A	The guiding strategy;						
		B	The congruent strategy;						
		C	The cooperative strategy;						
		D	The passive strategy.						
INITIATIVE	Was the process initiated by the municipality or by the market?	A	Yes, internal (municipal) initiative;						
		B	Yes, market initiative;						
		C	No internal or market initiative, process was triggered by obsolescence.						
BENEFIT / COST RATIO	Adaptive reuse of the object will result in a:	A	High social return;						
		B	Some social return;						
		C	Limited social return.						
	The expected net operating income after adaptive reuse will be:	A	Positive;						
		B	Neutral;						
		C	Negative.						

Figure 6.2 Comparison matrix 1 - Visual representation of the comparison matrix used in step 4, the initial exploration.

					Plan development by the municipality			Plan development by the market	
					Hold		Disposal	Disposal	
CRITERIA	Question	Options		Answer	Execution by the municipality	Execution by third party	Disposal with conditions of sale	Disposal with conditions of sale	Disposal without conditions of sale
REPRESENTATIVENESS	The object has an image-determining, aesthetic value that holds a certain sense of representativeness for the city.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
HISTORICAL AND CULTURAL VALUE	The object has historical and/or cultural value that should be preserved.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
LIVEABILITY	The object and/or possible future function contributes to the liveability of the area.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
URBAN MASTERPLAN	Is the object located in an area described in the master plan?	A	The object is located in an area described in the urban masterplan or municipal vision. This has implications on the future of the building;						
		B	The object is located in an area described in the urban masterplan or municipal vision. However, this has no implications on the future of the building;						
		C	The object is not located in an area described in the urban masterplan or municipal vision.						
SIZE	The expected financial investment of the project is?	A	High;						
		B	Medium;						
		C	Low.						
COMPLEXITY	What is the expected complexity of the project?	A	High complexity;						
		B	Some complexity;						
		C	Low complexity.						
STAFF CAPABILITIES	What are the capabilities of the employees?	A	Sufficient employees and expertise available;						
		B	Sufficient employees available, but there is less expertise on the matter;						
		C	Sufficient expertise, but there are less employees available;						
		D	There is a minimum amount of expertise and employees available;						
		E	Expertise and/or staffing is available through an external advisor.						
TIMING	Would the adaptive reuse project fit within the current political context and departmental planning?	A	Yes;						
		B	No.						
PLANNING CONSTRAINTS	The current planning constraints are sufficient to ensure the preservation of the building.	A	Strongly agree;						
		B	Agree;						
		C	Neutral;						
		D	Disagree;						
		E	Strongly disagree.						
PARTNERSHIPS	Is there an opportunity for a partnership with a market party or other public organisation?	A	Yes;						
		B	No.						

Figure 6.3 Comparison matrix 2 - Visual representation of the comparison matrix used in step 6, the detailed assessment.

from the theoretical and empirical research therefore show that the most suitable method to asses and value the criteria is by means of the comparison matrix.

The comparison matrixes (one for the key criteria and one for the sub-criteria) can then be deployed within a decision-making process, consisting of seven steps, subdivided into two phases. The subdivision into phases helps to structure the decision into an initial phase where an understanding is sought of the context, the stakeholders and their objectives. While the second phase seeks to outline the preferred alternative for that specific situation. It should be noted that caution in using the step-by-step plan is required, because processes are rarely according to plan and interrupts are bound to happen. These interrupts could occur because of scheduling, feedback and timing delays, as well as unexpected speedups, comprehension cycles and failure recycles

6.3 Adaptive reuse within the municipal real estate portfolio

Over the years, numerous articles have been written about the criteria and factors that could be considered during a decision-making process. These criteria and factors mostly relate to certain asset conditions and capital considerations, like the building characteristics, its function, the location, the financial status and market conditions. But what can be concluded from this research is that for a municipal organisation, the organisational context and the aligning of strategy with overall objectives is also very determining in the decision-making process.

The perspective on adaptive reuse differs vastly per municipality. Some were experienced with adaptive reuse, while others did not even consider the option of adaptive reuse. By means of the developed tool the municipality is provided with a structured decision-making process, which can be used by all municipalities, to maximise transparency, stimulate critical thinking, optimise MREM and offer an initiator for discussion. With these findings, the municipality can take a leading role in the initiation of adaptive reuse. And they should take that leading role, because they are one of the actors within the built environment that is in the position to have a large influence on the urban context. They can act by executing adaptive reuse themselves or be more considered and conscious of what happens with the object when disposing of vacant real estate. The tool provides them with a process wherein considerations are well grounded and clear, giving them the opportunity to preserve value and stimulate sustainable (re)development within their municipality. While still focusing on their core tasks. All, in order to achieve a liveable community where strategic, functional and financial interests are well balanced and supportive to the public goals.

7 RECOMMENDATIONS

This chapter of the report will, based on the findings and the conclusion of this research, outline the recommendations for further research.

7.1 Recommendations for further research

Validation of the use and practical implementation of the model
As the model described in chapter 5 concerns a concept model. Further research should be conducted, by means of test cases, if the use and implementation of the model is accurate. Whether the described step-by-step plan for structured decision-making brings the intended result and how the model can be used within discussion.

Roles and involvement of stakeholders
This research provided an in-depth analysis of the key and sub-criteria that should be considered in the decision-making process. The stakeholders that are involved to value these criteria have been identified, but what could be concluded from the empirical research is that roles of these stakeholders are constantly changing. Especially now, when many municipalities are still apprehensive on how the new organisational structure will turn out. Further analysis into the roles of the stakeholders would therefore be an interesting study, also when regarding the collaboration with the public. Which is expected to increase considerable.

Measuring intangible values
In the findings, it became clear that for a public organisation, like the municipality, intangible values are as important in the process as tangible values. Defining intangible values however proved to be difficult and is often subjective. Many municipalities are searching for ways to measure the intangible values in a coherent way. To assess the performance of the building and validate the decision to own the building. Even for instance when the financial return of the building is negative. the performance of a building. More research can be conducted to determine the intangible values and how they can be measured.

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APPENDIX

Appendix 1: Adaptive reuse criteria and factors in literature

Criteria: adaptive reuse potential

Location	Building
Location within the city (veto)	Year of construction (veto)
Land ownership (gradual)	Vacancy in number of years/square meter (veto)
Vacancy (gradual)	Dimensions of the building frame (veto)
Representativeness (gradual)	Possible capacity of dwelling units (veto)
Distance to and quality of facilities (gradual)	Representativeness (gradual)
Accessibility by public transport (gradual)	Exensibility (gradual)
Accessibility by car and possiblity for parking places (gradual)	Construction (gradual)
	Façade (gradual)
	Internal accessiblity (gradual
	Installations (gradual)
	Environmental aspects (gradual)
	Extensibility: horizontal/vertical (detailed assessment)
	Basement opportunities (detailed assessment)

Table 1 Criteria adaptive reuse potential - Criteria identified by Geraedts and Van der Voordt (2002)

Function	Location	Market	Legality	Finance
Eligible function	Traffic flows	Rent prices	Land-use plan	Surface (m^2)
User processes	Cadastral data	Building costs	Municipal visions	Building plans
Possible combinations	Accessibility			Construction costs
	Proximity to facilities			Local conditions
	Residential information			

Table 2 Criteria adaptive reuse potential - Criteria identified by Hek et al. (2004)

Physical	Economic	Functional	Technological	Social	Legal	Political
Structural integrity	Population density	Service ducts and corridors	Insulation and shading	Image / Identity	Standard of finish	Adjacent buildings
Material durability	Market proximity	Structural grid	Building management	Landscape / Townscape	Occupational health/ safety	Ecological footprint
Design complexity	Transport infrastructure	Flexibility	Natural ventilation	Neighbour-hood	Environmental quality	Community interest
Prevailing climate	Planning constraints	Disassembly	Natural	Aesthetics	Fire protection	Masterplan
Workmanship	Site access	Spatial flow	lighting	Human scale	Security	Ownership
Maintainability	Exposure	Convertibility	Orientation	Amenity	Energy rating	Conservation
Foundation	Plot size	Atria	Glazing		Comfort	Zoning
			Solar access		Disability access	
					Acoustics	

Table 3 Criteria adaptive reuse potential - Criteria identified by Conejos et al. (2011)

Criteria: adaptation versus demolition

Maximising wealth (Investment return)	Maximising utility (Functional performance)	Minimising resources (Energy usage)	Minimising impact (Habitat)
Benefit-cost ratio	Performance	Embodied energy	Environmental impact
Maintenance	User demand	Operating energy	Cultural impact
Durability			
Future replacement			

Table 4 Criteria adaptation versus demolition - Criteria identified by Langston et al. (2008)

Capital investment	Asset condition	Regulation	Sustainability
Aesthetics	Location	Governance	Environmental
Finance	Residual service life	Legislation	Economic
Occupier demand	Internal layout	Building code	Social
Marketability	Structural integrity	Planning requirements	
Tax concessions	Usability/functionality	OHS	
Corporate image	Space	Heritage	
Market trends			

Table 5 Criteria adaptation versus demolition - Criteria identified by Bullen and Love (2011c)

Economic	Social and cultural	Environmental and physical	Political
Compliance with statutory regulations	Social cohesion and inclusiveness	Retain historical setting and urban pattern	Transparency and accountability
Economic viability	Continuity of social life	Environmental performance	Community participation
Tourism	Sense of place and identity	Townscape	Supportive policies
Cost efficiency		Infrastructure	

Table 6 Criteria adaptation versus demolition - Criteria identified by Yung and Chan (2012)

Actors	Existing fabric	Adaptive reuse potential
Users	Original function	Physical
Producer	Physical character	Economic
Investor	Heritage values	Functional
Regulators	Needs of the district	Environmental
		Political
		Social
		Cultural

Table 7 Criteria adaptation versus demolition - Criteria identified by Mısırlısoy and Günçe (2016)

Criteria: hold versus disposal

Market	Organisation
Liquidity	Risk
	Time horizon
	Investor expertise and management burden
	Size
	Capital constraint

Table 8 Criteria hold versus disposal - Criteria identified by Geltner et al. (2001)

Finance	Market	Organisation
Capital commitment	Current portfolio	Economic factors
Asset allocation strategy	Staff capabilities	Capital markets
Actuarial assumption		Real estate market
Return objective		Alternative opportunities

Table 9 Criteria hold versus disposal - Criteria identified by Roulac (1996)

Building	Location	Market
Potential return	Location close to key cities or facilities	Demand and supply
Architectural attractiveness and representativeness	Function in relation to its environment	
Adaptive reuse potential based on physical characteristics	Population growth/decline	
	Future use in correspondence with land-use plan	

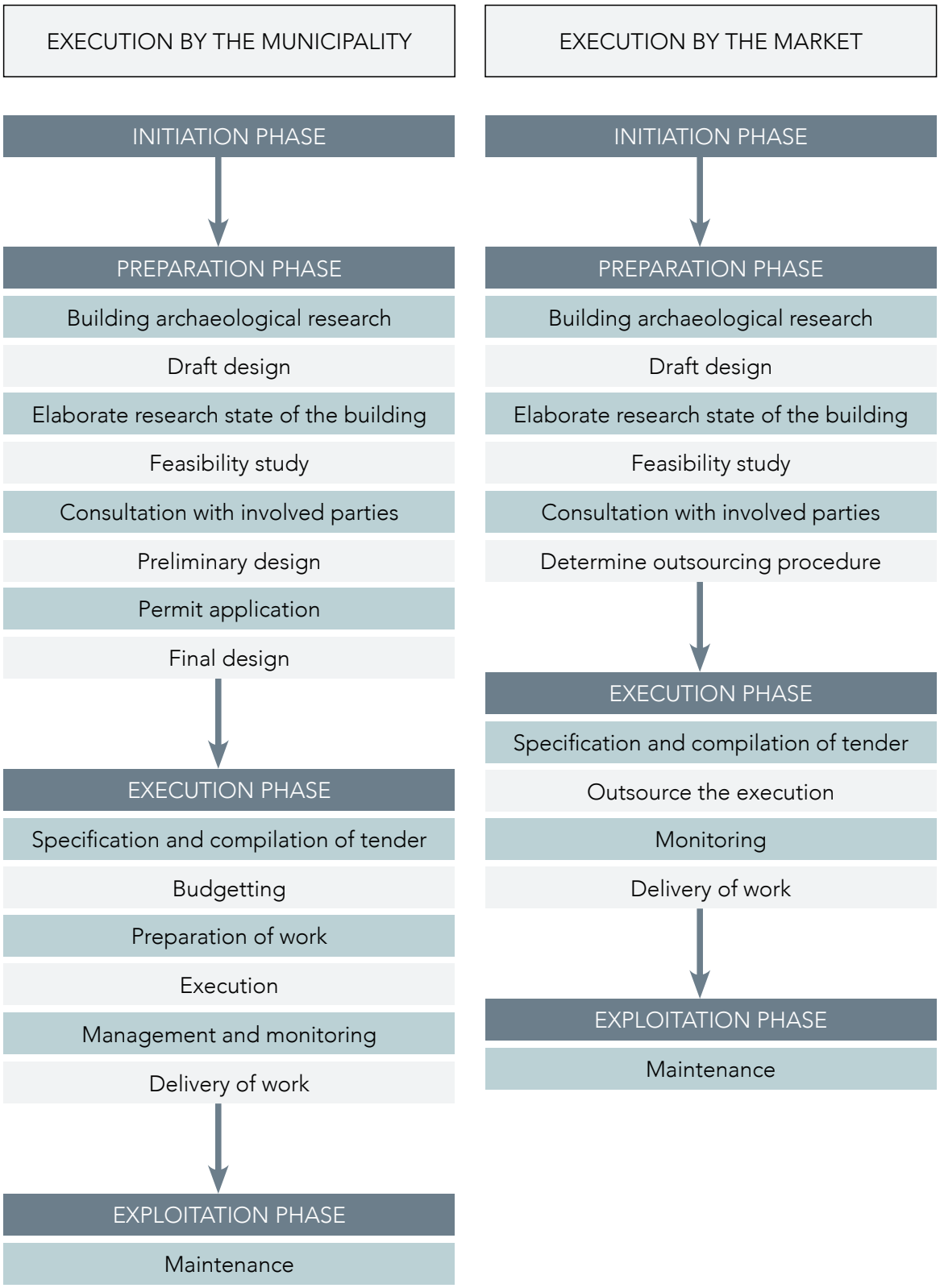
Table 10 Criteria hold versus disposal - Criteria identified by Hoevelaken (2015)

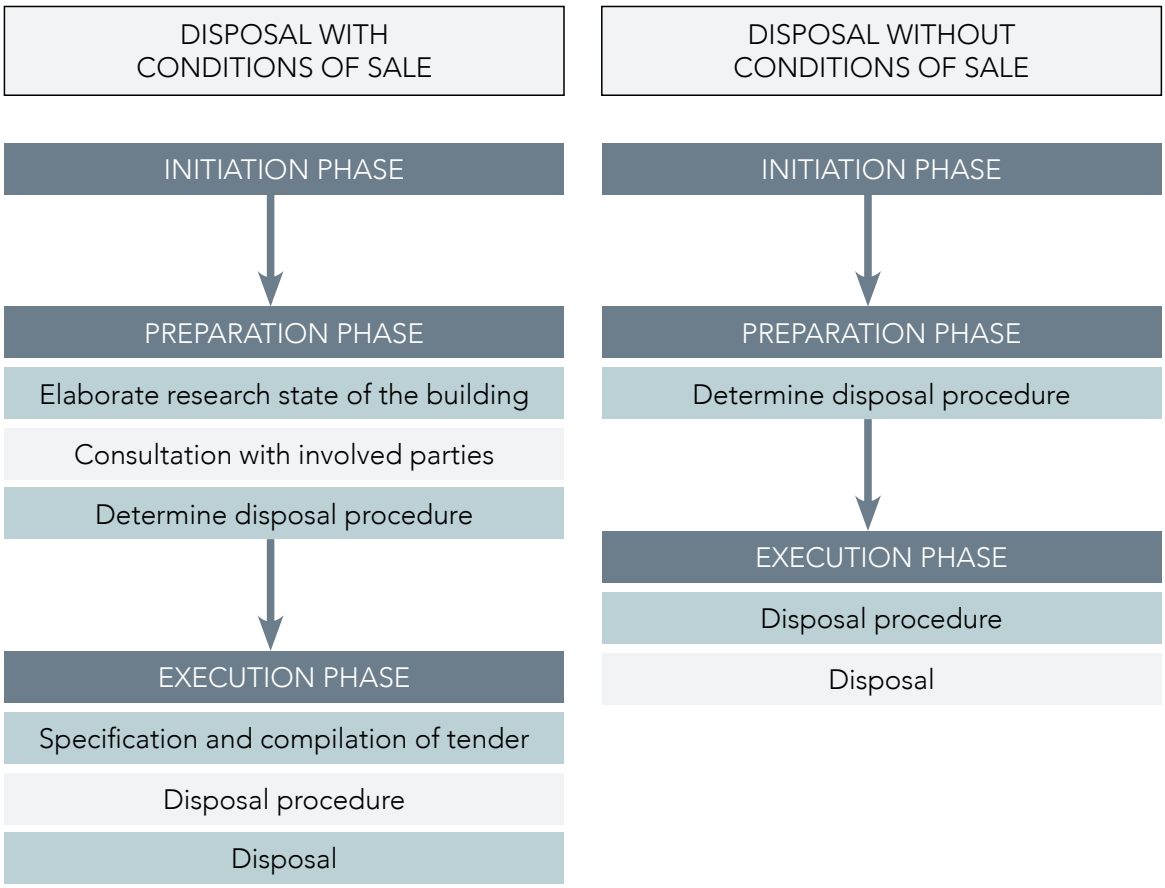
Appendix 2: Total list of decision-making criteria

Factor	Category	Criterion	Reference
Asset condition	Building	Convertibility	Conejos et al. (2011); Geraedts and Van der Voordt (2002); Hoevelaken (2015); Mısırlısoy and Günçe (2016)
		Design complexity	Conejos et al. (2011)
		Environmental performance	Conejos et al. (2011); Geraedts and Van der Voordt (2002); Wong, Hui, and Shen (2008); Langston et al. (2008); Yung and Chan (2012)
		Historical value	Yung and Chan (2012)
		Layout	Bullen and Love (2011); Geraedts and Van der Voordt (2002); Hek, Kamstra, and Geraedts (2004)
		Maintainability	Conejos et al. (2011)
		Monumental status	Mısırlısoy and Günçe (2016); Yung and Chan (2012)
		Representativeness	Bullen and Love (2011); Conejos et al. (2011); Geraedts and Van der Voordt (2002); Hoevelaken (2015); Yung and Chan (2012)
		Size	Bullen and Love (2011); Conejos et al. (2011); Hek et al. (2004); Geraedts and Van der Voordt (2002); Mısırlısoy and Günçe (2016)
		Technical status	Bullen and Love (2011); Conejos, Langston, and Smith (2011); Geraedts and Van der Voordt (2002); Hek et al. (2004)
		Vacancy	Geraedts and Van der Voordt (2002)
		Workmanship	Conejos et al. (2011)
		Year of construction	Geraedts and Van der Voordt (2002)
	Function	Cultural value	Langston et al. (2008); Yung and Chan (2012)
		Eligible function	Hek et al. (2004); Mısırlısoy and Günçe (2016)
		Functional performance	Bullen and Love (2011); Langston et al. (2008); Mısırlısoy and Günçe (2016)
		Possible combinations	Hek et al. (2004)
		Strategic purpose	Interviews
		User processes	Hek et al. (2004); Langston et al. (2008)
	Location	Accessibility	Conejos et al. (2011); Geraedts and Van der Voordt (2002); Hek et al. (2004); Yung and Chan (2012)
		Land ownership	Conejos et al. (2011); Geraedts and Van der Voordt (2002); Hek et al. (2004)
		Liveability	Langston et al. (2008); Yung and Chan (2012); Conejos et al. (2011)
		Location within the city	Bullen and Love (2011); Geraedts and Van der Voordt (2002); Hoevelaken (2015); Yung and Chan (2012)
		Proximity to facilities	Geraedts and Van der Voordt (2002); Hek et al. (2004); Hoevelaken (2015)
		Urban masterplan	Conejos et al. (2011)

Factor	Category	Criterion	Reference
Capital investment	Finance	Benefit-cost ratio	Hoevelaken (2015); Langston et al. (2008); Roulac (1996); Yung and Chan (2012)
		Book value	Interviews
		Construction costs	Hek et al. (2004)
		Investment return	Langston et al. (2008); Yung and Chan (2012)
		Maintenance costs	Langston et al. (2008)
		Net operating income	Interviews
	Market	Rent prices	Hek et al. (2004)
		Tax concessions	Bullen and Love (2011)
		(Occupier) demand	Bullen and Love (2011); Hoevelaken (2015); Mısırlısoy and Günçe (2016)
		Job creation	Yung and Chan (2012)
		Market conditions	Bullen and Love (2011); Conejos et al. (2011); Hek et al. (2004); Roulac (1996)
		Marketability	Bullen and Love (2011); Hoevelaken (2015); Mısırlısoy and Günçe (2016); Roulac (1996)
Regulation	Legality	Population density	Conejos et al. (2011); Hoevelaken (2015)
		Tourism	Yung and Chan (2012)
		Building code	Bullen and Love (2011); Conejos et al. (2011)
		Heritage law	Bullen and Love (2011)
		Land-use plan	Conejos et al. (2011); Hoevelaken (2015)
		Planning constraints	Bullen and Love (2011); Conejos et al. (2011); Yung and Chan (2012)
	Organi-sation	Actors	Mısırlısoy and Günçe (2016)
		Capital commitment	Mısırlısoy and Günçe (2016) ; Roulac (1996)
		Community participation	Conejos et al. (2011); Yung and Chan (2012)
		Corporate image	Bullen and Love (2011)
		Current portfolio	Roulac (1996)
		Experience	Interviews
		Initiative	Interviews
		Management strategy	Bullen and Love (2011); Roulac (1996)
		Municipal policy	Yung and Chan (2012)
		Organisation size	Mısırlısoy and Günçe (2016)
		Objective	Roulac (1996)
		Partnerships	Interviews
		Political context	Interviews
		Risk	Mısırlısoy and Günçe (2016); Roulac (1996)
		Staff capabilities	Mısırlısoy and Günçe (2016); Roulac (1996)
		Timing	Mısırlısoy and Günçe (2016)
		Transparency and accountability	Yung and Chan (2012)

Appendix 3: Steps of the alternatives





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Appendix 4: Qualitative interviews, interview guide (NL)

Uitleg onderzoek
Kort gezegd gaat mijn onderzoek over de vraag of herbestemmen binnen het gemeentelijk takenpakket valt of niet. Dit ga ik onderzoeken door te kijken naar welke criteria en belangen meespelen in een besluitvormingsproces, wanneer de gemeente een besluit moet maken over vastgoed binnen hun portfolio dat herbestemd moet worden. Moeten zij dit project zelf oppakken, uitbesteden of is verkoop van het object een beter keuze. Het doel van mijn onderzoek is daarmee het opzetten van een model waarmee besluitvorming strategischer en systematischer kan worden uitgezet. Waarin transparantie en verantwoording belangrijke kernpunten zijn. Daarnaast kan het door gemeenten gebruikt worden als discussiestarter om uitgangspunten van verschillende afdelingen scherp te stellen en zo tot een juiste beslissing te komen

Uitleg verloop interview
Het interview bestaat uit 5 onderdelen. Een introductie en slot, en daarnaast 3 thema's (Organisatie, Gemeentelijke portefeuille en Vastgoed strategieën).

Introductie

1. Welke functie bekleedt u binnen de gemeente en wat houdt die functie in?

Organisatie

2. Hoe is het vastgoed binnen de gemeente georganiseerd? En hoe groot is de organisatie die zich bezighoudt met het vastgoed? (aantal mensen) (Gecentraliseerd, verdeeld per beleid, etc?)
3. Wat is het doel van de vastgoedorganisatie?
4. Waarom heeft de gemeente vastgoed in bezit?

Gemeentelijke portefeuille

5. Hoe groot is de portefeuille op dit moment?
6. Wat zijn de verhoudingen? (Maatschappelijk, cultureel, commercieel, intern gebruik, etc.)

Vastgoed strategieën

7. Wat voor vastgoed strategieën past de gemeente toe?
8. Hoe gaan jullie om met verkoop, het afstoten van vastgoed?
    a. Hoe wordt een pand te koop gezet? (via makelaar, "bord in de tuin", veiling, direct met bepaalde koper)
    b. Kijken jullie dan naar de koper?
    c. Geven jullie voorschriften mee bij verkoop?
    d. Hoe denk je dat de gemeente zou moeten handelen?
9. Hoe gaan jullie om met leegstand?
    a. Is er inzicht in de hoeveelheid leegstand?
    b. Wanneer wordt bepaald dat de leegstand niet wenselijk is?
    c. Hoe denk je dat de gemeente zou moeten handelen?

10. Hoe gaan jullie om met herbestemmen en transformatie?
    a. In hoeverre pakt de gemeente zelf herbestemmingsprojecten op? (voorbeelden)
    b. Waarom werd die beslissing genomen om het wel of niet zelf te doen?
    c. Werken jullie samen met bepaalde partijen?
    d. Hoe werken jullie samen met die partijen?
    e. Hoe denk je dat de gemeente zou moeten handelen?
11. Wat zijn overwegingen die worden meegenomen wanneer er besluitvorming plaatsvindt om een bepaalde strategie toe te passen op een gebouw? (Waaraan moet het gebouw voldoen om in bezit te blijven?)
12. Zie je dat vanuit het college of de gemeenteraad nog bepaalde kaders worden gegeven waarbinnen de vastgoedstrategie moet worden geformuleerd?
    a. Wat zijn de grenzen, of het raamwerk waarbinnen jullie moeten werken?

Slot

13. Welke problemen ondervindt de gemeente op dit moment in vastgoed strategieën en naar welke oplossingen zijn jullie op zoek?