

# CONVERSION POTENTIAL AND OBSTACLES FOR MONOFUNCTIONAL OFFICE PARKS

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## **ABSTRACT**

*Lots of office buildings in the Netherlands are (partially) vacant. These vacant buildings are mostly found in office parks on the periphery of cities. Conversion of these offices to housing is an opportunity to deal with the lack of quality in these office parks and to tackle part of the housing shortage in the Netherlands. To make conversion to housing more probable, the office parks should become more lively and change their monofunctional character. Diversity in functions and aesthetics should be added and cyclists and pedestrians preferred above car traffic. The open character should be changed by densifying the office parks when adding additional functions. It is hard for a developer to set the first step in the conversion of an area. To ease the transition, the developer should convert a vacant building while looking for similarities between his vision and that of the municipality.*

**KEYWORDS:** *Office conversion, transformation, stakeholders, monofunctional, office park, conversion potential, bottleneck.*

## **I. INTRODUCTION**

### **1.1. Office real estate market**

Recent economic uptrends show the demand for office space in the Netherlands has been increasing compared to previous years. Vacancy rates of office buildings are falling because of a higher demand, offices being converted into other functions and the demolition of obsolete office buildings (Dynamis, 2019).

Even though the past years vacancy rates have been dropping, still a lot of offices in the Netherlands are vacant. In the year 2013, this was roughly 8 million m<sup>2</sup>, about 15% of the Dutch office building stock (Ministerie OCW, 2013). There is a shortage of office-buildings in city centres and modern mixed-use locations, which are popular locations because of their accessibility and lively atmosphere. When comparing the year 2014 to 2019, about 50% less building stock is for rent in important centre-locations. This shows the increasing demand and popularity of city centre locations (Dynamis, 2019). Multiple vacant historical buildings, in such prime locations, proved to be suitable for conversion to offices (Ministerie van VROM, 2006).

However, the situation is not as favourable in office parks: users of monofunctional office parks are often dissatisfied with their environment. Dissatisfaction is one of the reasons inner city locations and spots close to train stations became quite popular during more recent years. The uptrend of the economy and decrease of vacant office buildings in historical centres disguise the obsolescence of offices in these areas. Developers, investors and municipalities have developed too much office real estate and removed too little from the already present stock (PBL; ASRE, 2013). This shows that the office real estate market is an replacement market, instead of the deteriorating market investors are betting on.

### **1.2. Problem statements**

Currently lots of offices are vacant or partially vacant in the Netherlands. In the year 2018, almost 6,5 million m<sup>2</sup> out of roughly 48,6 million m<sup>2</sup> was vacant according to reports from Cushman & Wakefield (2018). This is in line with the roughly 48 million m<sup>2</sup> total office stock reported NVM

Business one year prior (2017). CBS reports 54 million m<sup>2</sup> office floorspace and lower vacancy in 2017, of which 66% had been vacant previous year as well (CBS, 2018).

*The difference in amount of office real estate could be because Cushman & Wakefield and NVM only report on offices bigger than 500 m<sup>2</sup>, while CBS includes smaller offices as well. CBS calculated a total of 84.000 assets (2017), much more than NVM's 15.000 offices (2016). This difference in numbers of offices and m<sup>2</sup> could be because of the inclusion of office buildings smaller than 500 m<sup>2</sup> by CBS (CBS, 2018; Cushman & Wakefield, 2018; NVM Business, 2017).*

Now that the vacant and obsolete buildings which can easily be sold or redeveloped are not so plentiful anymore, the actual problem of office vacancy becomes more apparent: what to do with all these buildings? When addressing vacancy in this paper, this is mainly structural vacancy. Depending on the author, structural vacancy is about two to three years of continuous vacancy. Important to note is that office vacancy is not a problem per se. Friction vacancy is needed for a healthy balance between demand and supply, making the market function properly (Heijden, 1986). It is the structurally vacant building stock for which solutions are needed. This is the first problem. Structurally vacant buildings have negative impact on their immediate surroundings. Therefore, a solution needs to be found.

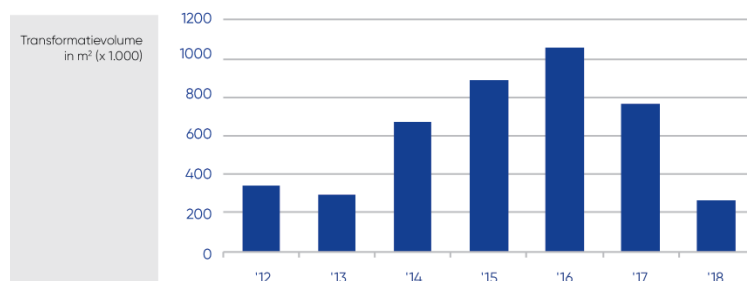


Figure 1: Decline office building conversion; from Dynamis, 2019. numbers show: Transformation volume in m<sup>2</sup> (x 1000)

A second problem in the Netherlands is the looming and already present housing shortage. ABN AMRO predicts roughly 157.000 net more houses are needed in the year 2030 (Buijs & Wolf, 2019). Main areas with housing need are the Randstad and the remainder of big cities. Housing market shrinkage is most present in the less densely populated areas such as the provinces of Zeeland, Limburg and the northern provinces Friesland, Groningen and Drenthe.

The actual number of to be built houses can be higher than the presented 157.000. For example: in Rotterdam almost 16.000 more houses are needed. But the municipality faces the challenge of a gross addition of 30.000 since it will demolish roughly 15.000 houses which are not up to standard or do not fit the preferred user group (Buijs & Wolf, 2019). ABF Research estimates a slightly higher housing shortage of 200.000 in the year 2030. This excludes the estimated 700.000 houses already expected to be built from 2019 up till 2030, making the housing need estimations close to 'one million' (Kleinepier, et al., 2019). The housing shortage shows need of housing which is not expected to be built.

A third problem in the coming years are the stricter EU regulations regarding sustainability, energy labels and office buildings. To meet these future EU regulations, office buildings in the Netherlands will have to have an Energy-label C or higher from 2023. 44% of the Dutch office building stock does not meet that requirement currently. In 2030 the requirement might be changed to Label A. 75% of the current Dutch office building stock does not meet the Label A requirement. All these buildings will have to be converted or renovated. If not transformed, these buildings could become vacant, adding to the aforementioned problems (Eerenbeemt, et al., 2019).

Lastly, in monofunctional office parks there is a general lack of quality. This is mentioned by users of office parks. A clear example is a group of private and public parties called 'de Alliantie' established in the area Rotterdam Alexanderknoop. 'De Alliantie' came up with a proposition to make their office

park more vibrant, since they noticed a lack of quality, a lack of liveliness, a lack of some forms of accessibility and present ‘‘dead’’ plinths (De Alliantie, 2017; Ministerie OCW, 2013).

Though conversion of obsolete office buildings has proven its potential many times over in popular city centre locations and historical buildings, it is harder to do so in less favourable contexts such as office parks.

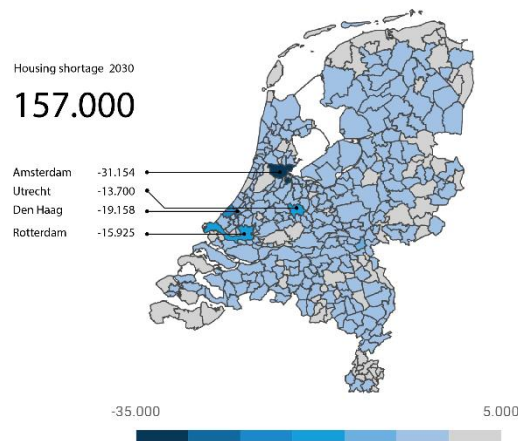


Figure 2; Net estimated housing shortage in 2030; edited image (Stadszaken.nl, 2019)

### 1.3. Research questions

The main research question of this paper is: What are the opportunities and bottlenecks for conversion from (partially) vacant office buildings to housing, in office parks in the Netherlands?

I will answer this question by identifying potentials and problematic aspects of monofunctional office parks in the Netherlands in chapter two. Then I will describe the crucial and important stakeholders when it comes to conversion from office function to housing function in chapter three. This is done partially by literature research and partially by the analysis of case studies. The information will be used as input in order to define a strategy on how to deal with vacant office stock: Mitigating the obstacles where possible and making use of the identified potential and opportunities. This is followed by several conclusions on how to go about converting office buildings in monofunctional office parks.

The following sub-questions will be addressed:

- Who are the stakeholders in the decision for transformation?
- Where is the need for transformation from office building to housing?
- How to make the conversion more feasible?
- In what way can users contribute to liveliness in current monofunctional office areas?
- What are successful cases for conversion of offices to housing?

The objective of this paper is to create a compelling case for the first catalyst in a chain of events from monofunctional office parks, to a diverse and lively neighbourhood. This will slowly upgrade the office park starting with one building situated in the monofunctional park as part of the overarching vision or design for the area. The gradual methodical approach is important to reach the desired end goal of a qualitative area (Post, 2007; van Velzen, 2013).

The focus of this research is on the bottlenecks and potentials of the office parks and on the stakeholders involved in the process of office conversion, since these aspects are often neglected by literature. Other aspects, equally important in the bigger picture are: building typology, construction requirements, finance and judicial aspects. These are ideally all integrated from the very start of the process. Plenty of literature and tools exist on these topics. For example: the *transformatiepotentiometer* and *leegstandrisicometer* in ‘Transformatie van kantoorgebouwen’ by van

der Voordt, et al. (2007). All these aspects combined could result in new business models (Remøy, 26 November 2019).

## II. OFFICE PARKS

### 2.1 Characteristics of monofunctional office parks

In the 1980s and 1990s, office buildings tended to concentrate in office parks near the highways on the edge of the cities, since inner cities could not cope or house the ever increasing demand for offices. Historically office buildings were situated in the city itself, instead of the periphery in varying types of locations depending on the trend and time. Building sites on the edge of town were cheaper compared to prime centre locations. Accessibility by car and expansion possibilities of the park were key factors in the creation of these locations. (Ministerie OCW, 2013)

### 2.2 Buildings stock with conversion potential

Areas with potential for conversion are places where the city is lacking primary uses. A lacking primary use is dwelling. Therefore, office parks near cities and the Randstad, areas with housing need, are potential candidates for office conversion. Furthermore, if an office building has an energy label lower than C it will have to be refurbished before 2023, increasing the conversion potential. This goes for buildings that do not have Label A as well, except that this deadline is in 2030. It is positive that the refurbishment deadline, which could be a conversion deadline also, is well known (Eerenbeemt, et al., 2019; Buijs & Wolf, 2019). Roughly one in six office buildings do not meet the label C criteria. About 45% buildings do not have a label, of which a significant proportion is expected to meet the requirements (figure 3). In the worst-case scenario this amounts to two million m<sup>2</sup> of office real estate (Dynamis, 2019).

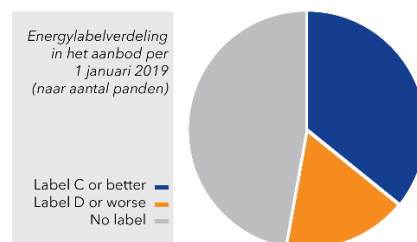


Figure 3; Energy labels per available office buildings; image edited for readability (Dynamis, 2019)

In order for an office park to qualify for transformation from monofunctional to a diverse and vibrant area, at least one of the buildings must be structurally vacant. This will make a more compelling case for conversion of a building as a catalyst to start the transformation of these specific areas.

Keep in mind that demolition (withdrawal from the market), further commercial exploitation (e.g. by lowering of rents) and renovation are also options for the current owner besides conversion (Koorneef, 2012). The option of demolition and development of a completely new structure can result in considerably higher profits compared to transformation. An example of this can be seen in Amsterdam Amstel III. Here developers are planning six new housing towers, many elevations higher than the current structures. The municipality of Amsterdam allows deviation from the zoning plan, including the permitted construction heights (Projectbureau Amstel III, 2017). Rotterdam will allow 150m tall towers in several areas, including office park Alexanderknoop (Gemeente Rotterdam, 2019). Although high-rises contribute to more people in the area, it is unlikely that these buildings contribute to a diverse, lively and therefore pleasant neighbourhood.

### 2.3 Bottlenecks of office parks

In general office parks lack quality for the users. While their accessibility by car and public transport is generally good, other modes of transportation are less well implemented. Cycle paths are not present or a network for cyclists is not complete. Although footpaths are present, unfortunately it is evident the areas are not designed for pedestrians. Big carparks next to the office building enable

users to come and go by car, making it the preferred mode of transportation. As a result there is little or no activity on the streets of these monofunctional places (Ministerie OCW, 2013).

The lack of liveliness and vitality seems to be a symptom of the weaknesses of the monofunctional-office park. Lack of diversity, a focus on fast traffic (cars) and little to no support for pedestrians and cyclists all contribute to these weaknesses; Pulling the area in a downward spiral: Where there is no life, no people will go to provide that liveliness. This results in no support for open plinths, mixed uses and other functions often associated to a lively area. *'[...] the perfect recipe for an insecure environment: lifeless streets, mono-functional buildings devoid of activity for most of the day, closed, lifeless and dark facades.'* (Gehl, 2010, p. 101).

## 2.4 Opportunities for liveliness and diversity

The reasons that office parks were an initial success are:

- Ease of accessibility by car
- Lots of room for expansion (since inner cities couldn't provide the need for more spaces in the 80's and 90's)

However, these office parks suffer from lack of quality because of:

- Poor connection between different modes of transport, including train stations. Pedestrians and cyclists are not being served well.
- No cohesion in public space and a disorganized appearance
- Limited liveliness because of vacant buildings and closed plinths

*'Planning for vitality must stimulate and catalyse the greatest possible range and quantity of diversity among uses and among people (...); this is the underlying foundation of city economic strength, social vitality and magnetism. To do this, planners must diagnose, in specific places, specifically what is lacking to generate diversity, and then aim at helping to supply the lacks as best they can be supplied.'* (Jacobs, 1962, p. 421) In other words: liveliness is needed in the office parks. Points on how to add liveliness are mentioned in the paragraphs 2.4.1 up to 2.4.7.

The lack of vibrancy despite the many functions and facilities is not inviting to others and results in a strict functional area (De Alliantie, 2017). This lack of quality could be solved with vibrancy. To quote Jane Jacobs: *'[...] missing diversity, convenience, interest and vitality do not spring forth because the area needs their benefits. (...) To wish a vital urban life might somehow spring up here is to play with daydreams'* (Jacobs, 1962, p. 156). But how to break the vicious circle? This could be done by introducing diversity.

Diversity is not the same as 'mixed-use', which one could call land-use diversity. Diversity could also be: social diversity and economic diversity. And it can be interpreted on different scales. *'[Diversity] can take the form of mixing at the scale of a block face, two sides of a street, around a corner or within a certain distance.'* (Vaughan, 2015, p. 154)

Diversity is needed in the office parks to make a vibrant, lively place. It contributes to the overall resilience of the city-ecosystem. One might conclude that diversity of use goes hand-in-hand with economic success over time (Vaughan, 2015). Fortunately, cities themselves permit and stimulate diversity but they do not do this just by existing. Cities generate diversity unevenly and fail to do so if they do not fulfil a set of requirements (see requirements chapter 2.4.1 to 2.4.7.). Listed below are several opportunities to create a diverse, and vibrant city, district or neighbourhood. These are derived from literature on city liveliness by Jane Jacobs, Jan Gehl and authors focussing on the UK 'High Streets' (since these streets are typically diverse and vibrant).

### 2.4.1 Different uses

Firstly, for a public place to be alive, it needs many different user types. It needs more than one primary function, preferably two. This is the opposite of the current monofunctional context in office

parks. These functions must be used by people who have different time schedules. That is the strength of the city and should be the strength of the place that is now still the monofunctional office area. Common examples of primary uses are residential and work (Gehl, 2010; Jacobs, 1962). Uses that could be introduced are those that the office park is lacking, but the city or town has in abundance elsewhere. As Jane Jacobs put it: *‘When primary uses boil over, these can become ingredients of primary mixture in places where the primary use of [work] is desperately needed.’* (Jacobs, 1962, p. 179). The retail and catering industries are obvious choices: when bringing more people to one area, they need basic functions such as commerce and leisure. These could be the basis and support when mixed with other functions like education or unique buildings like theatres to add to the diversity. But don't go overboard: Truly different things should be occurring at the same time, but by no more than four functions. The area should invite to mix, rather than impose (Sennett, 2018).

#### **2.4.2 Alternative routes**

Having alternative routes to choose will enhance mixing and mingling of the users. Long city blocks separate people. Fortunately, lots of office parks consist of individual buildings, enabling pedestrians to choose whichever way they go to their destination. However, in the current situation users do not have any reason to walk elsewhere than from their parking spot to the entrance of the office building. This could be changed by introducing other uses and functions. The current high connectivity is only possible because of railways and highways. But when these types of infrastructure inhibit the flow of users, the design should allow for permeating of these borders.

Furthermore, pedestrians often have to cross parking lots if they have a destination other than the entrance. This makes walking a less pleasant method of transportation especially in the dark, with lack of any social safety (for a big part because of the monofunctional character). When designing for liveliness and diversity, the 'island-like' character does allow for the benefit of many routing possibilities. Unfortunately, it goes against the notion of densification. Given the current problems described above, we should change how we are currently designing these areas (Gehl, 2010; Jacobs, 1962).

#### **2.4.3 Densification**

Densification is the third opportunity for office parks. The seemingly unlimited space that made these places possible in the first place could be put to use when making the areas more vibrant. The abundant space is partially the cause of lacking social safety, caused by the low density and the open character Gehl warns for. A compact street structure is needed, which is not present in the office parks (Gehl, 2010). High density generates the critical mass of people needed for vibrancy and liveliness to support city diversity. The right amount density is hard to quantify, making it difficult to incorporate in designs. It's either too little, or too much (Jacobs, 1962). Fortunately one can tell instinctively if the current situation is favourable or not: Current density in office parks is too low.

Note that it does not suffice to build higher and higher (like the plans for six towers in Amstel III). The reason density should be introduced, is because it generates activities in public places. Studies, mainly Scandinavian, show that people on the top floors of high-rises tend to venture less into the city than those who live and work in the lower four to five floors (Gehl, 2010). Because of that, in Dutch office parks, the density should not be increased by building higher, but by introducing more buildings, thus increasing the ground coverage, preferably gradually (Jacobs, 1962). Density should not be confused with overcrowding. The notion that a century ago, seven times more people lived in the same amount of space, shows densification is very much possible (Gehl, 2010; Jacobs, 1962). The density which represents the quality aspect must be combined with good city quality: compact city structures, acceptable walking and biking distances and quality public places (Gehl, 2010).

#### **2.4.4 Low cost exploitation**

In order to enable more (economic) diversity in an area, buildings supporting low cost functions and uses should be present (Jacobs, 1962). Since historical buildings are typically not present in the Dutch office parks, perhaps the obsolete structures of these places should fulfil that role. The mixing of smaller enterprises that rely on the support and present facilities in cities is only possible with buildings of low exploitation costs. Smaller enterprises add and stimulate diversity (Jacobs, 1962).

Therefore I advise for obsolete and vacant office buildings to allow for cheaper functions in the building itself in the short term and after conversion as well.

#### **2.4.5 Building adaptability**

When looking for other lessons of diversity we can find clues in the UK: the High Streets. Adaptability and flexibility of building structures proved to be an important factor for these types of streets. High streets are not purely a retail phenomenon. According to Fiona Scott *“typically two-thirds of trips to high streets were made for activities other than shopping: things like going to school, to work or to get somewhere else.”* (Scott, 2015, p. 209). Most activities in the high streets take place in buildings which were originally designed for different purposes. Their flexibility and adaptability allowed the mixing of contemporary needed functions (Scott, 2015). Even though the morphology of the office park is standardized, it could help the diversity after conversion for other functions. The conversion to housing potential is already elaborately covered in the transformation potential framework. Tools like the *‘transformatiepotentiometer’* help in defining the conversion potential as a quick scan or checklist (Voordt, et al., 2007).

#### **2.4.6 Length of stay**

In the previous paragraphs the importance of ‘having people in a certain place’ is described. A designer should focus on people who stay longer in the public space and not just on quantity. Richard Sennett defines it as: ‘the slower you move, the more you get to experience the city. Therefore cars and motorists are regarded as less useful for a city when it comes to lively and diverse cities compared to cyclists or pedestrians (Sennett, 2018). This is underlined by studies mentioned by Jan Gehl. *“Many people moving quickly through the space can result in considerable less life in the city than a handful of people who spend time there.”* (Gehl, 2010, p. 71). Think of Manhattans fast moving crowds of people during lunch hours. It’s the people who actually spend time there that bring life. In other words: more minutes, not more people (Gehl, 2010).

#### **2.4.7 The human scale**

Measures of human scale in the built environment would logically be seen to be based on the size of the human body (Sennett, 2018). This is quite the opposite of what happened in office parks: Monotonous offices consist of large stone and glass facades. Gehl mentions the ‘soft edges’ (read: facades) which are of vital importance for the diversity and vibrance of the city. The city’s edges, particularly the lower floors of buildings, are needed for people to interact: lots of open doors, new facades every four to five meters introduce diversity by incorporating the following points:

- Facades should conform to the human and pedestrian scale and rhythm with narrow units and many doors.
- Transparency and openness in facades so people can see what’s going on inside.
- Interactive edges appealing to all senses.
- Varied facades by mixed functions with narrow units and many doors. With good quality materials and plenty of details to serve as attractions in order to slow the pedestrians.
- Vertical façade rhythms make walks seem shorter and are more pleasant than horizontal facades. (Gehl, 2010)

Isn’t it odd that all these things are the exact opposite of a typical 80’s and 90’s office façade?

### **2.5 Conclusion office parks**

To conclude: to gain liveliness and quality, the designer has to change the monofunctional character of the office park into a multi-functional area. This goes hand in hand with diversity. Besides the previously mentioned benefits, this is something completely different than the eyesore that is homogeneity and has other added bonuses like easier navigation and ease of finding landmarks (Jacobs, 1962). Others also mention purposely creating an identity for the area. Though one can’t help but wonder if the identity would automatically follow once the area has become more vibrant. Lastly, the 2023 and 2030 sustainability deadlines are big opportunities for conversion. Refurbishment is an integral part of the building (Konstantinou, 26 November 2019). Having the refurbishment deadline for multiple buildings at the same time, could mean the turning point for an area.

### III. STAKEHOLDERS

There are many parties and stakeholders involved in a conversion from offices to housing. Some stakeholders play a key role and are involved in multiple facets of the process, while others play a minor role. In this chapter only the relevant stakeholders are described. They are divided into four groups: the owner of the office building, the developing party, the owner of the building after the conversion, or outsiders with influence on the process (see table 1). Some stakeholders can play more than one role in the process. For example: a private owner could be the developing party as well and choose to remain the owner after conversion.

Stakeholders involved in conversion of office buildings to dwelling		
Owner office building	Developer	Owner (after conversion)
<ul style="list-style-type: none"> <li>• Investor</li> <li>• Government</li> <li>• Private owner</li> </ul>	<ul style="list-style-type: none"> <li>• Investor</li> <li>• Housing Corporation</li> <li>• <i>Genossenschaft</i></li> <li>• Private owner</li> <li>• Commercial developer</li> <li>• Government</li> </ul>	<ul style="list-style-type: none"> <li>• Investor</li> <li>• Government</li> <li>• Private owner</li> <li>• Housing Corporation</li> <li>• <i>Genossenschaft</i></li> </ul>
Other stakeholders able to influence the process		
<ul style="list-style-type: none"> <li>• Government (Municipality, Province, National)</li> <li>• User</li> </ul>		

Table 1; Relevant stakeholders for office building conversion.

#### 3.1. Investors

There are many types of investors. They all have the goal to make profit in common. The owner of office real estate are often institutional investors, real estate investment funds or owner-users (Meijer, 2016). Institutional investors are: pension funds, insurance organisations or investment funds (Bos, n.d.). Roughly 70% of office real estate in the Randstad is owned by investors (Remøy, 2019). Investors in the field of office real estate have a short term vision and conjuncture can play an important role in their decision making. Investors aim to make profit each year: direct income. Their focus is on 10-15 years, sometimes even shorter. Investors on the housing market (such as housing corporations) have a more long term vision. Therefore investors such as housing corporations are more invested in the wellbeing of the users and preservation of quality, since only this way they can make their profits after periods of (over) 25 years. This is not the case in typical office real estate. In other words: office real estate versus housing real estate is a matter of direct income, versus value addition (Remøy, 2019).

##### 3.1.1. Obstacles and opportunities

- Owner expects market to recover

All investors speculate on a recovery of demand when the economy drops, assuming the cyclical nature of the market. When results are down, they assume a deteriorating real estate market after which it should recover, visible by increase in demand for their building. However, the office real estate sector is actually a replacement market (Ministerie OCW, 2013; Voordt, et al., 2007). Conjuncture and increasing housing prices (which increase the conversion potential) disguise the actual situation: obsolescence of old office stock. Because of the investor's short term vision, the damage the inaccurate speculation of valuation does to the real estate market is not visible to the office real estate investors. By then, these assets in their portfolio have changed hands (multiple times) already. As long as investors do not see or feel the downside of this short term focus it is unlikely anything will change.

- Sizeable building portfolios

With a big portfolio the malfunctioning or obsolescence of one building is not harmful for the office owner per se. With nearly 55 million m<sup>2</sup> of sizeable office real estate in the Netherlands, buildings become statistics to the investors (CBS, 2018).



The office real estate market embodies staggering amounts investments and is still growing: from less than 2 billion in 2013, up to 7,9 billion euros in 2017 of investments were made (Hentenaar, 2018). If one of those buildings is underperforming by being (partially) vacant, this is not necessarily an issue felt by the owner, unlike the users of the building or area.

- Difference in financial assessment

Different valuation methods, by the owner and the developer, are troublesome when it comes to conversion potential:

The developer estimates the value of the building by calculating the residual value. ('expected revenue from sales and rents' – 'conversion costs' = residual value)

Meanwhile, the current owner, often an investor, values its buildings in its portfolio by adding up future rents. Or when a building is vacant, potential future rent. Here especially a mismatch is visible. This is just one of the ways conversion potential is inhibited by different valuating techniques (Remøy, 2019; Voordt, et al., 2007).

*Investors value their stock by capitalised rental value versus the valuation of developers who use residual transformation value.*

- Difference in expertise and vision

Lastly, the investors have their field of expertise and obligations to shareholders. As previously described, there is a difference in short and long term profits (respectively office real estate and housing real estate). Therefore, though not impossible, it would be improbable for investors to convert their stock from office to housing.

- Ego

Conversion to housing is not seen as a success to investors. This is a very 'human' factor.

Furthermore, when selling an office building to a (housing) developer, the potential economic loss is also visible (Voordt, et al., 2007). The economic loss remains disguised as long as the asset stays the same function.

## **3.2. Housing corporation**

Housing corporations have a main target group of people with an income not higher than 38.035 Euro per year (as of 2019). These are possibly younger people, students, elderly and low-income families (Rijksoverheid, 2019).

Corporations can own, exploit, develop, convert and demolish housing for their target group. Other activities and means have the overarching goal to benefit the community and people (Voordt, et al., 2007).

*'Housing corporations are private, non-profit stakeholders who conduct (semi)public tasks in public housing.'* Translated from: (Voordt, et al., 2007, p. 336)

### **3.2.1. Obstacles and opportunities**

The housing corporation does not have the main goal to make profit, but is allowed to do so. Though the dwellings owned or developed should be intended for the wellbeing of the people being housed. Since other activities are meant to improve and continue the quality, the housing corporation could play a key role in the conversion of offices in monofunctional office parks. Unique projects, such as the SS Rotterdam in Katendrecht, have been developed by housing corporations to increase the quality of the area. However, the possibilities to actually develop social real estate are limited. This grey area of unique projects, where more than just the direct user group is targeted, has been minimized in the past ten to fifteen years. Currently there is a more critical look towards activities of these corporations. The example of SS Rotterdam solely illustrates the difference in acceptance to start such a unique project (Voordt, et al., 2007; Remøy, 2019).

Their sizable capital properties, shared interest in quality of the living environment and long term vision make them a suitable partner to play an active role in the conversion (Voordt, et al., 2007).

### **3.3. Genossenschaft**

A *genossenschaft* is a collection of citizens who collaborate and organizes itself judicially in order to develop housing, a housing block or even a neighbourhood. The initiative can come from the group itself or an authority such as the municipality. Its two main goals are quality and affordability (Agentschap NL, 2012). These forms of cooperation are mainly found in the German speaking countries: Switzerland, Austria and Germany. However, since 2015 they are increasing in popularity in the Netherlands, though still not the norm (Tourkov, 2019).

After the completion of the development process, the *genossenschaft* ceases to exist. An alternative option is to change the aims of the *genossenschaft*: focusing on the maintenance and management of the building and users (Agentschap NL, 2012).

#### **3.3.1. Obstacles and opportunities**

An obstacles of a *genossenschaft* is the lack of expertise. The *genossenschaft* consists of people new to the process from every part of society. (With the exception of countries where *genossenschafts* are common and its people experienced with the process. Here the risk of gentrification exist with long-established *genossenschaften* (Lupi, 2017).) Help from the municipality could make or break the success of the project, so lack of guidance from the municipality could become a severe obstacle as well. Without expertise, it is virtually impossible to successfully finish a conversionproject. Furthermore, cost reduction should never be the main driver to opt for a *genossenschaft*-construction. The process is intense and a purely finance driven motive will harm the process and success of outcome.

The *genossenschaft* will often bring special wishes and solutions to the table, potentially resulting in a diverse built environment. An added benefit is that costs of these projects are 10-20% lower than the conventional market value, since financial gain is not a primary motive. A redundancy for realtors and the option to contribute to some phases of construction contribute to lower costs also (Lupi, 2017; Agentschap NL, 2012). Therefore this form of collaboration should seriously be considered when converting an office building. Though not the driver for the users and developers, the added benefit of cost reduction does open new doors where other types of (conventional) developers have failed. The municipality should help the *genossenschaft* in what ways they can.

### **3.4. Private Owner**

Private owners of real estate are common in the Netherlands (Meijer, 2016). Though not as big as (institutional) investors, their role should not be underestimated, since some private owners have a portfolio of over 5000 houses (Eerenbeemt, et al., 2019).

#### **3.4.1. Obstacles and opportunities**

If the private owner of an office building does not have a portfolio which is too large, this will hypothetically mean he could still have a long term vision. Making the conversion from office to housing under the same owner more likely. However, this is not common. Furthermore, as long as the owner of the (vacant) office does not feel the pain of the vacant building, it can put off selling the office, making conversion virtually impossible. With any type of ownership, it helps if the owner actively looks for parties willing to buy the building (see appendix 5.2).

### **3.5. Commercial developer**

The commercial developer has the primary goal to make profit. It can be a stakeholder with lots of know-how on conversion from office to housing. Usually the commercial developer will buy a building, convert the building and sell the project. Sometimes it will hold on to the project for a few more years to make sure all housing units, or other realised functions, are filled with tenants or sold to future owners.

#### **3.4.1. Obstacles and opportunities**

An obstacle would be the primary focus on financial gain. Note that this is not necessarily a bad thing if this results in a project beneficial for the future users.

### **3.6. Government (Municipality, Province and National)**

The municipality can influence and decide on spatial plans. The Province and the national government (*Het Rijk*) make structural plans and visions. Furthermore the municipality is the contact for the market: developers, owners and users. Transparency and clear communication on their vision and policies are key. The municipality is usually not a direct stakeholder.

Because structural vacancy is a sign of a poor local economy, it is something any self-respecting municipality will actively combat. Developers will help the municipality if its vision and policies are clear.

The case studies showed that endorsement and help from the municipality, was a vital part of the success for some of these cases. They also showed the importance of clear communication with the municipality (see appendix chapter 5.2.).

### **3.7. Users**

A user could be an owner-user, the economic owner or tenant (Eerenberg, 2011). Whatever way, he or she will live in the building and has an invested interest in the quality of living in and around his house.

#### **3.7.1. Obstacles and opportunities**

In case of a *genossenschaft* the user is the owner as well. The better a design fits the intended users, the more potential the conversion will have. Therefore it helps having extra input in the developing phase from the future users. Tenants and buyers traditionally do not have this input and will have to make due with what is available for them. Therefore their vision, wishes and demand are often not direct input for the developed environment. They adapt to the environment, not the other way around. Therefore the *genossenschaft* will likely have a beneficial effect on the quality of living.

The designer and developer should not forget that the liveliness from users is about quality, not just quantity. Adding middle or upper income could be in line with the municipality's vision, but can go against the notion that they would add liveliness. For example: a couple with respectable jobs can provide the needed income and resources to the area, but these are typically the users that are not present during the daytime. Students, the creative class or perhaps elderly people with more time on their hands can be the better choice here. As was decided in the conversion of Puntegale from office to student housing (see appendix 5.3.3).

Previously mentioned was the notion to add multiple primary functions. I would say that this also counts for the users: add multiple types of people who use the same places and functions on different times of the day. If the municipality wishes middle and higher incomes, also add liveliness by adding the creative class or students. One could add these users first and later switch housing to the envisioned end user. Or they could co-exist (in the same building). We'll call this the 'catalyst user'. Some successful transformation cases have already designed with this switch of users in mind. Westplantsoen in Delft has housing units for students, which can easily be converted from two, to one housing unit (see appendix 5.3.1).

Lastly, the case studies showed the importance of the involvement and endorsement of the municipality. (see appendix 5.2) It would help if the user groups were the same types of users the municipality had envisioned for that area, or the city.

## **IV. CONCLUSION**

Even though the office market seems to recover from a rough period, in office parks there is no structural solution for the vacancy and obsolescence of the real estate. These once so popular

locations are dealing with a lack of quality and a problematic structural vacancy. The lack of quality is felt by the users in monofunctional office parks and not always by the owners of the buildings. Office conversion used to be a way to deal with obsolete office buildings, but the low hanging fruit has been plucked. Luckily there are two opportunities to improve the situation in office parks:

- The housing shortage in the Netherlands. The demand for more housing is most present in the Randstad and the cities. Office parks are located on the periphery of these exact same cities. Meaning: every office park will likely be located on the edge of a city with housing need.
- Because of EU regulations, the refurbishment deadline, an integral part of the building, falls on the same date for 44% of Dutch office buildings: we know exactly when a refurbishment is due.

We can answer the question: ‘‘What are the opportunities and bottlenecks for conversion from (partially) vacant office buildings to housing, in office parks in the Netherlands?’’ with: pick the right stakeholders in your conversion process and contribute to liveliness in the area with your design.

More housing should be introduced to contribute to solving its shortage. However, no-one would want to live in mono-functional area, making successful conversion very difficult. Therefore, the design should increase the quality, which goes hand in hand with vibrancy and liveliness.

Contributing to liveliness is done by:

- Mitigation of the traffic bottleneck: introduce and stimulate other (slow) modes of transport such as pedestrians and cycling.
- Introduce diversity of users, socio-economic, function, design etc:
  - Introduce different primary uses: housing, commerce, leisure
  - Enhance mingling and mixing of users in the area by allowing for alternative routes through the area.
- Densify the area. Focus on the lower floors. This also helps with the financial aspects. Do this by expanding in horizontal axes, not by building higher.
- Allow for low cost exploitation by (small) enterprises. These will add and stimulate diversity and liveliness: increasing the value of your building in the long run.
- When designing, make use of the building adaptability. This allows for flexibility in function. Secondly, retain adaptability for potential future uses.
- Focus on length of stay by users, not just a sheer quantity. This is done by following by the previously mentioned conditions and by introducing several user groups.
- Design for the human scale: opening up the façade, diversity in design and no more closed facades.

For a conversion to succeed the current owner, likely an investor with profit as a motive, will have to have a vacant building which he agrees to sell. Since investors and developers value a building differently, the developer will have to find a way to lower costs. Typologies suitable for conversion are described in already existing tools such as the *transformatiepotentiometer*. Additional costs could be lowered by opting for usergroups with less requirements: students, creative class.

Moreover, a *genossenschaft* as a developer could result in lowering buildings costs. But finance should not be the main driver for the people in this group. *Genossenschaften* stimulate diversity of users since these forms of collaboration can incorporate a section of society.

Furthermore, financial help could be obtained from the municipality and other parties, such as educational institutions, if a similarity on vision and usergroup is present. The municipality is a key player in the conversion as well. Not only does the design have to fit its zoning-plan, the local government can aid financially and in legislation as well, sometimes the make-or-break aspect.

If need be, housing corporations can provide the needed backup in whatever aspects there is need (finance, providing tenants, professionalism, introducing a different user group etc.). But the focus of their specific clientele could be a limiting factor.

The conversion design should have a long term vision and allows for quality of use, in line with that of the municipality. Though a (design) vision following the earlier described rules will allow for a qualitative area, the same vision should be present in the building as well (see appendix 5.2).

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## V. APPENDIX

### 5.1. Casestudies – learning from casestudies

Five cases were studied for this research. The cases were selected because they are almost all former office buildings which have been converted to a housing function, sometimes with other uses as well. Furthermore the developing stakeholders were different in the several case studies.

The studied cases are:

- Westplantsoen, Delft
- GEB-tower, Rotterdam
- Puntegale, Rotterdam
- Kleiburg Klusflat, Amsterdam
- De Grote Enk, Arnhem

Listed below followed by the conclusions and summarized in *table 2* at the end of the appendix.

### 5.2. Conclusions from the casestudies matrix:

Often conversion is not the first choice for a building, but the only option left: The office owner has no other option than to sell, or lose profit on the building. And a converting developer party was the only stakeholder able to make use of the building feasible again.

In case of Westplantsoen, maintaining an office function was not feasible, as shown by the previous years of vacancy of the building. For the GEB-tower the municipality did not want to demolish, and *Stadswonen* gave conversion to housing as a suitable alternative. For Puntegale, also in Rotterdam, an office function was not possible either, neither was demolition. The Kleiburg flat in Amsterdam was sold for the symbolic price of one euro. This was the best that previous owner Rochdale could do, to prevent losses. De Grote Enk was not to be demolished and received a monumental status for that reason from the municipality, making conversion a feasible option.

With successful transformation there is always a push: vacancy. When the owner chooses to take no action at all, or does not see any other possibility, the building could remain vacant. The minimum need for conversion is that the owner accepts selling as a possibility.

Expertise from involved parties could make or break the project. Selecting a familiar architect, a housing corporation well known with the process and having a vision in line with the municipality all helps a lot.

The municipality plays a crucial role, even though it is not directly involved. The wishes from the developing stakeholders should align with that of the municipality.

Accept for vacancy, there is no other push for the former owners towards conversion. They do not stay involved. This is not to be expected in 'common' circumstances or future 'common' cases of conversion from office to housing.

Often the unique circumstances allow the developer to convert the building. For example: a low buying price, as was the case for Kleiburg Klusflat, or exemption from standard building code by the municipality for Westplantsoen. When vision and needs from the developer align with other parties, they could help, sometimes financially. This was the case for Westplantsoen where TU Delft made the project possible by partial funding. In other words: the push for the office owner is always obsolescence and therefore vacancy. The pull for a developer can be one of many reasons.

### 5.3. additional information on the cases

#### 5.3.1. Westplantsoen

Westplantsoen is a former office building in Delft converted to student housing; 45-90 housing units on 5425 m<sup>2</sup> former office floor. The building has been stripped to its core and rebuilt. It had been



vacant for about five years. The owner contacted the developing party DUWO via the TU Delft. From this we can conclude the vacancy was a definite burden for the owner. The transformation's success was partly due to working with experienced parties. SSHR (Stichting Sudenten Huisvesting Rotterdam), now called *Stadswonen*, already had previous experience with office buildings. DUWO, a well-established developer and owner of student housing in several cities as well. The municipality was also open to the plans, on the condition that there would be a flexible plan for studenthousing. Subsidies from both the TU Delft and the municipality of Delft show the willingness and need from parties other than the directly involved former owner and developer and future owner.

Other factors making this a success were:

- The beneficial location and the (continuous) need for student housing in the city, which was confirmed by a market analysis by DUWO beforehand.
- The municipality of Delft also helped in a juridical way by giving permission to realise housing in the basement. Both the subsidies acquired and the judicial cooperation by the municipality where must to make this project possible.

The reason subsidies were given by TU Delft and *Gemeente Delft*, was partly due to the fact that renovation or reuse as an office were no option. The past had proven that the building would remain vacant. Other parties: Hof van Delft and Stichting Delftse Studentenhuisvesting (SDSH) had been unsuccessful in acquiring the vacant office before. The transformation design by architects office Karina Benraad did fulfill the needs of involved parties but showed room for improvement in a questionnaire by inhabitants. But an added level did prove to have several downsides. However, this was one of the starting points to make successfully transform office buildings, according to Karina Benraad (Voordt, et al., 2007). I would argue that the architect should not have done this: the quality is under par compared to other parts of the building, (according to inhabitants) and neighbouring inhabitants complained about the addition as well. However, the architect was also a party with former expertise on the subject. (Voordt, et al., 2007; Ministerie van VROM, 2006; DUWO, n.d.)

### **5.3.2. GEB tower**

The GEB Tower is a former office building converted to student housing in 1993; 235 housing units were developed on 10.000 m<sup>2</sup> former office floor.

The GEB tower in Rotterdam became obsolete for the municipal electricity company. Because of the building's aesthetics, the city of Rotterdam did not want the building to be demolished. For a period of three years the building had been empty. Conversion development and building time is shorter than a development of a new building. The conversion proposal did not receive any resistance from inhabitants of the nearby surroundings.

The client, *Stadswonen Rotterdam*, is an experienced housing corporation. The preservation of the GEB was a mutual objective for both the municipality and Stadswonen.

*“the conversion of the GEB-tower in Rotterdam has become a success because the initiator Stichting Stadswonen, had an urgent need to convert the building, the realisation of good housing for young people and students in that area.”* (Ministerie van VROM, 2006)

Overall the process has been executed without major issues and no opposition because of aligned views of both parties and the former owner who needed to sell the building. (Ministerie van VROM, 2006; Stadswonen Rotterdam, n.d.)

### **5.3.3. Puntegale Rotterdam**

Puntegale is a former office converted to student housing and other functions. It has: 201 housing units, sixteen small officespaces, 2500 m<sup>2</sup> working area and a meeting room, sportsfacilities and parking, all on 26.000 m<sup>2</sup> former office space.

The conversion of Puntegale is an interesting case since it is part of a successful integral design. The usergroups were specifically selected to serve as instigators for liveliness in the area: The building Puntegale was developed for students in 1999, while ‘de Machinist’ was converted into work and education spaces for the creative class in 1995. Both users and functions would help transform the area itself. (Ministerie van VROM, 2006)

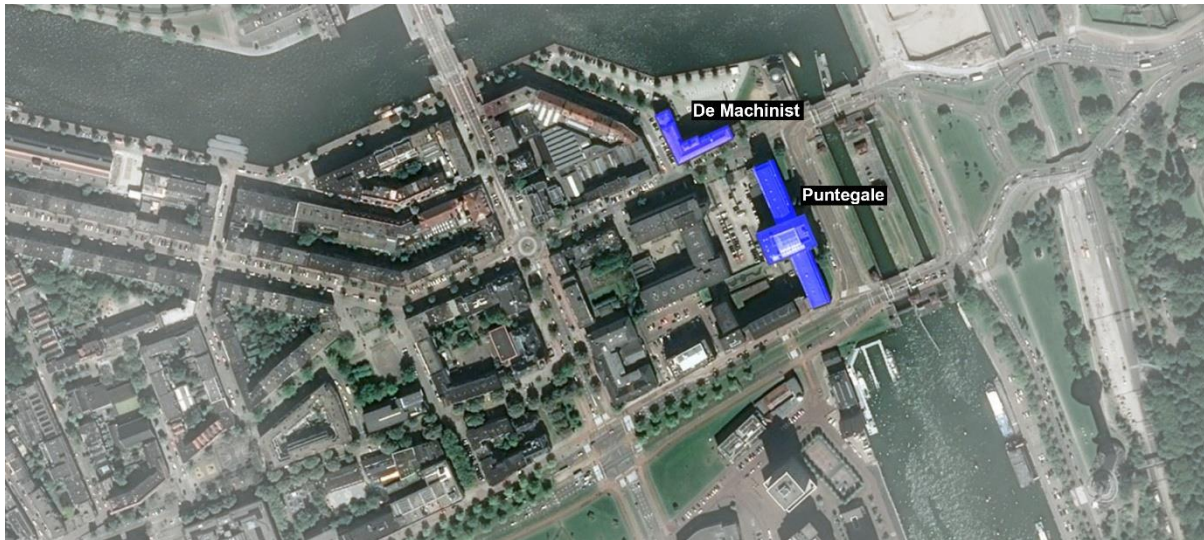


Figure 4; Location of Puntegale and De Machinist, own image

Puntegale could not be demolished because it is a protected heritage building: a *Rijksmonument*. Retaining an office function was not an option either, because of an insufficient amount of parking spots. Before the building was vacant, the former owner and user, Dienst Domeinen, sold the building to housing corporation Stadswonen who were also involved in the GEB-tower and the Westplantsoen.

A condition from *Gemeente Rotterdam* was that Puntegale would be converted to housing for students, starters and/or elderly. The municipality of Rotterdam and the developer were targeting the same usergroup. Because of the aligned interests from Rotterdam and Stadswonen an exemption from the existing zoning plan was allowed.

The developer and future exploiter Stadswonen selected an architect which they were familiar with (then called: ‘de Jong Bokstijn architecten’). The architect used to potential of the building to create a design that met building code. A long term vision made this project feasible. Proven by the financial feasibility, sustainability interventions and a smooth cooperation with the architect and municipality. Lastly, the historic character added unique value to the building. (Voordt, et al., 2007)

#### **5.3.4. Kleiburg Klusflat**

The conversion of Kleiburg Klusflat is quite unique since the previous owner, Rochdale, sold Kleiburg for the symbolic price of one euro. This was Rochdale's best option since demolition would have been more costly. The housing corporation Rochdale houses roughly 80.000 people in Amsterdam and its surrounding area.

For conversion a minimalistic approach was chosen. The houses were sold as a bare structure and could be joined if adjacent housing units were bought. The selling of bare housing structures resulted in a low market price, suitable for starters on the housing market. Within two years all houses were sold. Costs average around 1300 to 1600 euro per square meter; significantly lower than the average housing price of 1900 to 3200 euros per square meter in the area (Gemeente Amsterdam, 2019). The success of the project is illustrated by the fact that there is a waiting list to buy a house in the flat. Furthermore the project won the prestigious ‘Mies van der Rohe price’ (ARCAM, n.d.; Kompier, 2015; Remøy, 2019; Kondor Wessels Vastgoed, n.d.).

### **5.3.5. De Grote Enk**

De Grote Enk in Arnhem is a former office building from the 1950s. The building was designed by H.T. Zwiers and has historic value. The municipality of Arnhem wanted to prevent demolition once owner and user AKZO decided to sell the building. Therefore it was placed on the list of monuments (*lijst van jonge monumenten*). The municipality of Arnhem did not have plans to convert the building themselves. A vision initiated by project developer 'Velperparc bv' for the surrounding area was one of the reasons the developer decided to participate in this conversion project. Unlike previously mentioned projects, the municipality played a minor role in this specific conversion. Though it was still positive towards the plans of the involved stakeholders. In combination with new housing, the developer assumed the project financially feasible, after quick calculations using the architects first drawings. The conversion started in 2005 and completed in 2006, fifty years after the initial built. The monumental value and favourable location proved key success factors for this conversion project. (Voordt, et al., 2007)

Project	Previous owner	Possible functions	Target Group	Structural vacancy?	Client or developer	Role from Municipality	Help other parties	Push	Pull
Westplantsoen Delft	Belastingdienst (Tax office)	Housing	Students and starters	5 jaar	DUWO (Foundation for student housing)	gave subsidies, allowed exemption from the zoning	SSHR (made a Feasibility study ordered by DUWO) TU Delft (who gave subsidies)	Geen inkomsten eigenaar, vermoedelijk privaat.	clear communication and agreements between Delft, the developer and TU Delft.
GEB-toren Rotterdam	Municipality of Rotterdam	Housing	Students	3 jaar	Stadswonen (Housing corporation)	Wanted the building to be preserved	-	-	The wish from Stadswonen to develop housing helped the municipality to prevent demolition.
Puntegale Rotterdam	<i>Dienst Domeinen</i> (Tax office)	Mixed functions	Students	short	Stadswonen (Housing corporation)	Had a specific usergroup in mind; allowed exemption from the zoning plan	Dienst Domeinen, which started to look for developers before the building was vacant.	-	The owner started to look for a developer/buyer very early. The wish from Stadswonen was in line with the municipality.
Kleiburg Klusflat Amsterdam	Housing corporation (Rochdale)	Mixed functions	Families and starters	"long"	Consortium de Flat (officially Kondorwessels vastgoed)	-	-	Rochdale wilde afstrotten.	the option to buy for 1 euro made the project feasible for the developer.
De Grote enk Arnhem	Company (AKZO)	Housing	Starters and middle income	unknown	Veiperparc bv, BAM Vastgoed bv, Bunnik en Klaasen Vastgoedontwikkeling, Velp	Remained in the background	-	obsolescence for the company AKZO	favourable location and financial feasibility combined with new construction

Table 2. key aspects of studied conversion cases.