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KEY ISSUES IN SUCCESSFULL TRANSFORMATIONS OF INDUSTRIAL HERITAGE

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Abstract

Much of our industrial heritage lost its function in the transition from an industrial to a more service-based economy. Meantime, changing consumer preferences have shortened the functional and economic life cycle of buildings to such an extent that many have become vacant and obsolete. Developers tend to prefer to demolish such buildings and redevelop the entire site in an effort to solve the mismatch between supply and demand. However, from society's point of view, conversion to new functions is much more appropriate. Industrial heritage has much to tell about the spirit and socio-economic aspects of bygone eras and architectural concepts and often contributes to the identity of the neighbourhood or the city as well. It is virtually impossible to reproduce the intrinsic qualities of industrial heritage in new developments. In addition, preservation promotes sustainability as it cuts down on materials and transport. On the other hand, many investors and developers worry about the high costs and risks of conversions to bring existing buildings into line with new user requirements and legislation.

In this paper we discuss ways in which the various stakeholders in transformation projects cope with these dilemmas. We focus on seven cases, including the redevelopment of the NDSM site in Amsterdam (a former shipbuilding area), the A-factorij in Amsterdam (a former bicycle factory converted into office and business premises) and the transformation of the famous Van Nelle factory in Rotterdam - an icon of functionalism - into a 'design factory'. Economic feasibility, a clear concept, effective marketing and PR, alignment with the local supply and demand, and the right match between the local policy of public and private partners are key factors in the success or failure of such projects.

1. Dealing with Obsolete Industrial Real Estate

Much of our industrial heritage lost its function in the transition from an industrial to a more service-based economy. Technical obsolescence and changing demands are bringing an end to the functional, technical and economic life cycles of many buildings. In 2007, 7.6 million square metres of business premises were supplied for occupancy, but only 3.7 million were actually leased (DTZ 2008). A large part of the supply is obsolete – and obsolete, vacant real estate performs badly on the market. It becomes rundown and dilapidated and invites vandalism.

Demolition and redevelopment of the site might be the answer to re-aligning supply with demand but, from the perspective of society, preservation and re-designation might be a better option, especially if the real estate has a lot to offer in terms of cultural value. In addition, industrial buildings often contribute to the identity of the neighbourhood or city and many of them have characteristics that cannot be replicated in new buildings. Re-designation would also promote sustainability as it creates less waste and reduces transportation. These effects should all be weighed against any environmental benefits from another, more modern building. The benefits of transformation are, however, offset by obstacles relating to, for example, financial feasibility (owing to high acquisition and conversion costs), an undercapitalised market demand or problems with the zoning plan.

Recently, we have learned more about the positive and hindering aspects of the conversion of office buildings (Van der Voordt et al., 2007). The stimulating aspects include a good location, a support structure that copes fairly easily with new functions, the possibility of preserving the facade, high emotional value, and keen players who are prepared to pull the cart. The downside includes a high book value and as a consequence high acquisition costs, high conversion costs because of substantial technical and structural defects, the presence of asbestos, tight zoning plans, insufficient parking space, and a low local demand for homes or other amenities. In this paper we discuss the ways in which the stakeholders dealt with these dilemmas in the redevelopment of seven industrial real-estate objects. It is evident that similar factors are at play when it comes to industrial heritage, but the characteristic qualities of industrial heritage sites are exactly the factors that increase the chances of success. Especially when they are translated into a clear concept. We shall begin by explaining the research strategy (Scheltens, 2008).

2. Research Strategy

The research began with a review of the literature on conversion projects (Van der Voordt et al. 2007; Saris, Van Dommelen & Metze, 2008) and on planning and decision-making and the relationship between the two (including Corner et al., 2001, and Peek, 2006). The literature review revealed, among other things, how important it is not to be too solution-oriented, but to adopt an iterative and cyclical orientation based on problems, potential strategies, the interests of all stakeholders and the political context. Next, we looked at the conversion of the Timmerij – which formed part of the redevelopment of the NDSM site in Amsterdam – as a pilot case with the aim of gaining a clearer understanding of the problems, the potential solutions and the research tools. Then, we studied two projects in detail by analysing documents and by holding in-depth interviews: the A-factorij in Amsterdam (a former bicycle factory converted to office and business premises) and the Helpmancentrale in Groningen (former power station converted to office space). Finally, in-depth interviews were held on four other projects in order to broaden and deepen the insight: the Van Nelle factory in Rotterdam, the Caballero tobacco factory and the RAC-hallen (former garage and carwash facilities) in The Hague and the Kauwgomballenfabriek (former chewing gum factory) in Amsterdam. Table 1 lists the key characteristics of the projects. In this article we compare seven cases to show how these kinds of projects get off the ground (initiative, development) and how the concept and financial feasibility are of influence.

3. Theoretical framework

The theoretical framework for studying the seven cases is derived from various disciplines, including property management, process management and public administration. The 'Kingdon model' (Kingdon, 1995) we adopted from this latter discipline has also been used in research into transformations of inner city locations by Bruil (2004) and Peek (2006). The model links problems, solutions and the vicinity of real estate developments, political events and opinions (Teisman, 1995; Peek, 2006). It also links the planning process and the decision-making process. Decision-making is aimed at formulating the planning objectives and attaining resources (e.g. investments, permits) during alternating periods of inclusion and exclusion of interests (Peek, 2006). The planning process is aimed at formulating solutions. It is important to include the interests of as many actors as possible in order to secure sufficient sources of funding. Nevertheless, some interests will also have to be excluded, because answering to too many different interests leads to unacceptably large investments. Moreover, too many different interests can result in the works getting gummed up, with little prospect of realising individual interests and goals, and an accompanying loss of quality. The prospect of achieving their interests and goals will make the actors more likely to commit to the process for the long term (De Bruijn et al, 2007). The planning process is an iterative process of conceiving solutions, analysing, varying and selecting based on a review of the interests of actors and of financial feasibility. In the initial phase, the planning process can still be influenced without having a severe impact on financial feasibility. As the process continues, more and more decisions are laid down in legal agreements. This diminishes uncertainty about what can be expected, but also the degree to which potential solutions can be influenced (Gehner, 2003).

Table 1: Key characteristics of the seven cases

	Timmertj - MediaWharf, Amsterdam	A-Factorj, Amsterdam	Mediacentrale, Groningen	Van Nelle Design factory, Rotterdam	Caballero factory, The Hague	Kauwgomballen factory, Amsterdam	RAC-hallen, The Hague
							
Built in	1930	1950	1931	© Fas Keuzenkamp 1925 - 1931	1953	1956	circa 1920
Surface area (m2 gross floor space)	6.500	12.702	18.330	55.000	14.000	16.000	5.600
Former use	Carpenter's yard, dockyard and shipbuilders	Simplex Machine - Bicycle factory Brocacef storage	Helpmancentrale (power station)	Sara Lee: coffee, tea, tobacco factory	Cigarette factory British American Tobacco (BAT)	Maple Leaf chewing gum factory	Parking garage and carwash for government vehicles
Current use	Office	Office	Offices & catering	Offices & events	Offices & business Incubator	Multifunctional	Offices & events
Designation after conversion	Office accommodation	Business/office accommodation	Business accommodation	Business accommodation	Business accommodation	Business/catering / meeting facilities	Offices/ meeting facilities
Type of development	Area development	Object development	Area development	Object development	Area development	Area development	Area development
Year of initiation	1995 1st phase; 2003 2nd phase	1998	1998	1996	2001	2006	2007
Year of acquisition	2006 (project organisation)	1999	1998/99	1998	2001	2006	2000
Year of delivery	2007	2002	2005	2002 - 2005	2006 1st phase; 2008 2nd phase	2007 - 2008	2009 planning
Phase in process	Management phase	Management phase	Management phase	Management phase	Management phase	Management phase	Realisation phase
Former owner	Municipality	Owner/user (Brocacef)	Municipality	Owner/user (Sara Lee DE Utrecht)	Municipality	Owner/user (Maple Leaf)	Municipality
Current owner	Investor	Investor	Project developer (TCN SIG)	CV van Nelle Design Factory	Municipality	Project developer (Lingotto)	Municipality
Initiator	Project developer	Project developer	Municipality	Former owner/user	Municipality	Former owner/user	Municipality
Project development (leader)	Project developer (Redconcepts)	Project developer (Trammell Crow Nederland & Bedrijvenhuis Nederland)	Project developer (TCN SIG)	Project developers	Municipality	Project developer (Lingotto)	Municipality
Architect	Max van Aerschot architect bv	Neutelings Riedijk Architects	Karelse van der Meer	Wessel de Jonge/ Cleassens Erdmann Architects/ Molenaar & van Winden.	Group A architects	i.a. Mei- architects (building A)	Braaksma & Roos Architecture & Restoration
Anchor tenant	MTV Networks	Ogilvy Group	RTV Noord	Multitenant	Multitenant	Multitenant	Unknown
Target group	Media businesses	Sport & leisure businesses	Media & ICT businesses	Communication & design businesses	Creative & Innovative businesses	Creative businesses	Events organisation and affiliated businesses

When it comes to complex processes such as the transformation of 'brownfields', it is still often the case that solution-oriented strategies are pursued or that the perspective is limited to the interests of the actors involved. An American study (Corner et al, 2001) has shown that an interactive, dynamic approach – which includes both the process of inclusion and exclusion and the process of considering potential solutions – leads to a smoother overall process.

To move forward, moments must be created when the actors' interests are aligned (Teisman, 1995) and the three streams of decision-making, planning and coordination in relation to the environment are all discussed together. Linking these three streams can create a "window of opportunity", according to Kingdon, in which prevailing patterns are broken, the unthinkable becomes thinkable and opportunities for innovative solutions present themselves (Bovens et al. 2007).

It is important to create favourable conditions, such as the input of an 'entrepreneur' (for example, an external consultant) or media attention. Sometimes, a special event can work like a catalyst (Teisman, 1995). For example, a crisis that generates a wave of publicity, shifting attention (Bovens et al, 2007), or the publication of a book that attracts wide attention, such as Richard Florida's *The rise of the creative class*. Since the publication of this book, every self-respecting town has been trying to attract the creative class.

Another catalyst is formed by the introduction of a clear concept (Verbart, 2004). The process of concept development shows strong similarities to the process of planning. Following the example of Rijkenberg (2005), Van der Meer (2002), Van Elst (2005) and Dijkstra (2007), the notion of a concept is defined in our study as a one-of-a-kind idea with specific core properties and *a priori* assumptions and parameters that give direction and guidance to planning and decision-making. A concept must have both assumptions and parameters for economic feasibility and it must express things about planning goals and actors' interests. Together, these factors provide the bandwidth for further conceptual development, including the planning and architectural design and decision-making. According to the four authors mentioned the concept-development process amounts in essence to analysis, comparing the analyses to the basic assumptions, parameters and actors' interests, variation and the selection of the concept. Confrontation with the various interests takes place during the creative process. Market interaction is a required component (Rijkenberg, 2005) for balancing the interests of future users with the interests of the actors involved. A clear concept is economically important, because it can contribute to the value of the real estate on the open market. This means that the concept must be unique and completely resistant to duplication.

Using scenarios can be a handy tool for creating optimal supply for the marketplace based on demand predictions, which are difficult to make. The literature often works with three scenarios, for example economic growth, recession or consolidation, and a timeline of 10-15 years. Dijkstra (2007) is an exception. She calls for concept scenarios that cover a longer time span.

4. Initiation and Development

The study revealed similarities and differences between the players and the motives for initiation and development. All seven buildings were functionally and economically obsolete. They were vacant either because the occupants had moved to other premises (Maple Leaf, Sara Lee, Caballero) or because they had outlived their uses (shipbuilding, bicycle manufacturer, breaker's yard). The conversion project may have originated with a desire on the part of the municipality to develop the area. The transformation of an empty industrial building can act as a catalyst for further development, as in the case of the Caballero factory in The Hague.

One important strategic issue is the acquisition of a land position. The Mediacentrale project in Groningen and the RAC-hallen project in The Hague were part of an area-based strategy initiated by the municipality whereas the Timmerij and the A-factorij in Amsterdam were initiated by a project developer; the Timmerij on the basis of market potential and the A-factorij as a concrete answer to a request for accommodation from an organisation. In the case of the Van Nelle factory in Rotterdam and the Maple Leaf chewing gum factory in Amsterdam it was the owners who took the lead. They wanted to sell off the buildings but, at the same time, needed to be sure of an appropriate strategy. In both cases a market tender was issued in collaboration with the municipality. The further development was assumed by a project developer. Only the Caballero factory and the RAC-hallen were developed by the municipality, because less favourable economic conditions and differences of opinion about the target group made it impossible to get private players on board at an early stage. In Groningen the municipality asked a project developer to submit a plan for the old Helpmancentrale. One striking detail here is that the project developer was originally a government agency.

Apparently, if the municipality itself has an interest in a conversion, it is more willing to acquiesce in adjustments to the zoning plan. Without municipal cooperation the process will probably be sluggish and protracted. Motivated market players are another key success factor. The earlier projects tended to be approached on an individual basis, even when area-related considerations played a role, such as a potential

rise in the price of land (Mediacentrale) or improved accessibility, relatively cheap land or a location suited to the target group (A-factorij). In the later projects the conversion of the building was almost invariably part of an area-based strategy.

5. Thinking in terms of the Building, the Market or a Concept

Besides the functional and technical potential and limitations, decision-making on existing buildings is dictated mainly by the market of supply and demand, the municipal policy and financial feasibility. Usually, this is a cyclical and iterative process (Peek, 2006). In this process, problem analyses, the design of potential strategies and solutions and selection through assessing the interests of actors, the political context and financial feasibility all alternate constantly. A dynamic often arises between new actors who commit themselves to the project and make resources available, and actors whose interests are inadequately reflected in plan development and who pull out of the project. The planning and decision-making processes also appear to be strongly influenced by the intrinsic qualities of the building and the site, and development from the perspective of a concept. The decision to transform the former Helpmancentrale into Mediacentrale (media centre) was partly inspired by the robust physique of the building, the availability of a glass fibre network, and the municipal ambition to turn Groningen into an ICT city. Similar considerations came into play in the RAC-hallen in The Hague and MediaWharf in Amsterdam. These projects distinguished themselves in their core values from conventional office premises and explicitly eschewed the collective option. The MediaWharf concept played an important role in securing the GO decision for the area development and persuading the new user (MTV) to locate to the former shipyard. MediaWharf is one of the few projects in which the concept was formulated in advance and then converted into basic premises and conditions, which served as a guideline for the decision-making and planning process. Hence, the MediaWharf project followed the practice of using a concept as a guiding idea (Rijkenberg, 2005; Dijkstra, 2007). According to Rudy Stroink of TNC, developer of the A-factorij, a guiding idea is essential in a planning process: "Once we had a clear idea, we could operationalise it in everything: the design, the space and the external presence (from an interview with Stroink, 2008). As the Van Nelle factory is an icon of functionalism and well-known to designers throughout the world, the concept of a design factory was an excellent choice in terms of marketing and PR. It also bears out Rijkenberg's theory (2005) that a concept often finds its origin in the history and 'soul' of a product. Rijkenberg maintains that the hallmark of a good concept is a unique and non-replicable idea. In effect, the building does not derive its distinctiveness from unicity but rather from exceptional architecture or an industrial aura. Distinctiveness is essential in order to acquire a market share (Rijkenberg, 2005). 'Profiling' can also play a role in marketing and PR by adding expressive value (Rijkenberg, 2005), a prime example being the Mediacentrale, whose name refers to the building's history as a power station. This feature is now used as a marketing profile. Normally, concept and financial feasibility are, however, hardly ever linked. Sometimes there is scarcely any clear concept. A general decision may have been taken to turn the building into collective accommodation for the creative sector, but with no mention of specific target groups. In other cases the concept may not take shape until later in the planning process or there may be a clear concept at the start, which gradually becomes watered down as the process continues. Occasionally, a concept may have to be dropped, perhaps because the building does not fit in with the demand or the zoning plan, or because the pressure to deliver on time forces concessions.

6. Financial feasibility

Generally speaking, the concept and financial feasibility are linked too infrequently. Financial feasibility analyses for the transformation of industrial real estate are swathed in uncertainty. The costs of acquisition and conversion are difficult to estimate. The leasing prospects are partly determined by external factors, such as area development plans and changing market conditions. In practice, the acquisition price is determined by a market tender based on the value of the land in relation to the former function or on the book value. In the buildings studied, the acquisition price was no obstacle to transformation. In many cases, the acquisition price was lower than the market value as estimated by the developer. The acquisition price of the projects studied is between € 150 and € 210 per m² GFA, with the exception of Mediacentrale (Table 2). This building was sold for a symbolic amount. If the building is owned by the municipality and if the municipality emphasizes redevelopment, then it is often willing to accept a lower price or to accommodate the developing party in another way, for example by awarding them other construction projects.

Table 2: Financial data

	Case 1	Case 2	Case 3	Case 4	Case 5	Case 6	Case 7
Acquisition costs per m2	Unknown	€ 150	€ 12	€ 197	€ 426	€ 160	Unknown
Leased/Owned	Leased	Leased	Owned	Owned	Leased	Leased	Leased
Total investment costs per m2	Unknown	€ 1982	€ 844	€ 462	€ 1879	Unknown	€ 349
Hypothetical rent of office space per m2 on the open market (2007)	€ 200	€ 165	€ 130	€ 147-€ 156	€ 117	€ 161	€ 88
Hypothetical rent of business space per m2 on the open market (2007)	Unknown	€ 133	Unknown	€ 39 - € 43	Unknown	Unknown	Unknown
Agreed annual minimum rent per m2 for tenants with less capital (2007)	€ 30		€ 45		€ 60	€ 51	€ 45

Often the conversion costs are higher than anticipated because the level of intervention is greater (demolition and new building of facades and other components) than initially intended. This happened in the case of the A-factorij, the Caballero factory and the Kauwgomballenfabriek, where elements such as facades, roofs and window frames were in very poor shape. Also, the returns are frequently disappointing, because it is virtually impossible to rent out the entire building right away. This is due to, amongst other factors, a mismatch between the delivered functional quality and the market demand; or, as in the case of the Van Nelle factory, to insufficient PR and marketing and under-exploitation of media coverage.

The risk of sub-letting can be limited by starting the building activities only when a certain percentage of floor space has been leased. Remarkably, in the case of both the A-factorij and the Van Nelle factory not a single lease had been signed when building commenced. The Caballero factory only had three tenants in this phase. Subsidies may have a positive or a negative effect on financial feasibility. The European Regional Development Fund applies stringent criteria for the target group and sets tight deadlines for execution and delivery. This is why the Mediacentrale, the Caballero factory and the RAC-hallen had to be realised within a relatively short period, which left the players no time at all to respond effectively to market developments, review the strategy, or generate enough publicity for the project. The Timmerij was made financially feasible because the municipality accepted a negative land development report for the object as there was a prospect of equalisation in the future. In some projects the developer counts on rises in the value of property when the area is upgraded.

In the user phase, a tenant with a particularly engaging presence – a so-called anchor tenant – can help to raise the profile of the object and attract other tenants. Differentiation in the dimensions of the space and the level of rent can also enhance rentability. Another useful tool to improve financial feasibility is to increase the volume by, for example, adding extra floor fields (the Timmerij, the Caballero factory and Mediacentrale) or storeys (Kauwgomballenfabriek) or by partial demolition and new building (A-factorij).

7. Reflections and Conclusions

It is certainly possible to transform old industrial buildings, but it is not easy. And it will never happen without sufficient enthusiasm. Sometimes a municipality takes the initiative. In other cases, private parties approach municipalities with a proposal. If the municipality takes the initiative, then it usually looks for a private party for further development. In all cases, new users must be found to ensure that the transformation is financially feasible. Publicising the building and the area takes quite a bit of time, as do finding solutions that take the interests of all stakeholders into account, creating cash flows, obtaining permits, sketching market and economic development opportunities for the site, and building a positive image. The process should be a gradual one.

A solutions-oriented strategy is sometimes adopted and an architectural design is quickly produced (A-factorij) without sufficient consideration for all kinds of political interests on the part of the actors involved. In some other projects (Mediacentrale, Caballero factory), the interests and goals of the actors were so prominent, that this led to ad hoc decisions and cumbersome management of financial feasibility. In the case of A-factorij and Mediacentrale, hindsight shows us that there were too many interests at stake. This led to dramatically higher investment costs.

A smooth planning process requires early formulation of clear assumptions and parameters. It is also recommended to use the media for publicising the plan starting in the development phase. The examples indicate that there is a lot to be gained from thinking in terms of a concept. A clear concept can bind players to the project and improve the likelihood of financial feasibility. Sometimes, however, formulating a clear concept seems to be an insurmountable task and the intrinsic qualities of the building are not fully appreciated with regard to their inherent potential. It is important to keep this in mind and to carefully guard the concept in the design and implementation phase and during management.

In the initial phase some projects are especially focused on providing space for pioneers from the creative class and on being breeding grounds for ideas. However, the perspective of higher rents remains attractive, and this is a precondition for optimising building use from the perspective of financial feasibility.

A concept can also be an impediment. Intertwining the interests of all stakeholders and formulating common goals and preconditions for the planning process have proven to be essential for reducing the risk of parties pulling out prematurely. Responding to the market and municipal policy increases the willingness of the municipality to cooperate and assist with changes in zoning ordinances.

Setting aside the financial risks and procedural or legal risks arising from adjustments to zoning plans, a number of solutions seem to be emerging. Table 3 lists some common problems and possible solutions.

Table 3: Problems and solutions

Theme	Factor	Obstacles	Suggested solution
Organisation	Players	Players who do not sufficiently commit to the process	More intertwining of interests to collectively reach a planning objective.
Legal aspects	Zoning plan	Imposed restrictions, no prospect of change.	Find a planning solution within the legal limitations or involve the municipality and respond to policy and urgency.
Financial feasibility	Investment costs	Higher building costs due to higher levels of intervention	Develop higher quality (office) space and target a higher user segment
	Sustainable investment	The need to plan and build fast.	Exploit the building temporarily to realise returns until it is time to assess the market and the economic climate.
Image	Image change	Time pressure imposed by subsidy conditions	Take the time to generate publicity for the building and the area and carry out the conversion gradually.
Concept	Communication	Not enough publicity during the development phase	Use the media to publicise the plan.
	Formulate in advance	Uncertainty about future developments	Develop a concept in advance with basic premises and conditions.
	Guideline	Deviation from the concept in decision-making and planning process.	Manage the concept during the design phase.

Despite the extensive amount of literature on scenarios, they are seldom used in practice as yet. Once a concept has been established which is then consistently used as a guideline for finding solutions, then we see that alternative concept-based solutions are seldom devised which could be linked to different scenarios for market, economic or political developments. There are many benefits to be had in this area as well.

The projects shared a remarkable number of similarities with the opportunities and risks identified in earlier conversions of offices into homes. Exploiting the opportunities and a pro-active response to the risks can significantly increase the chance of success!

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