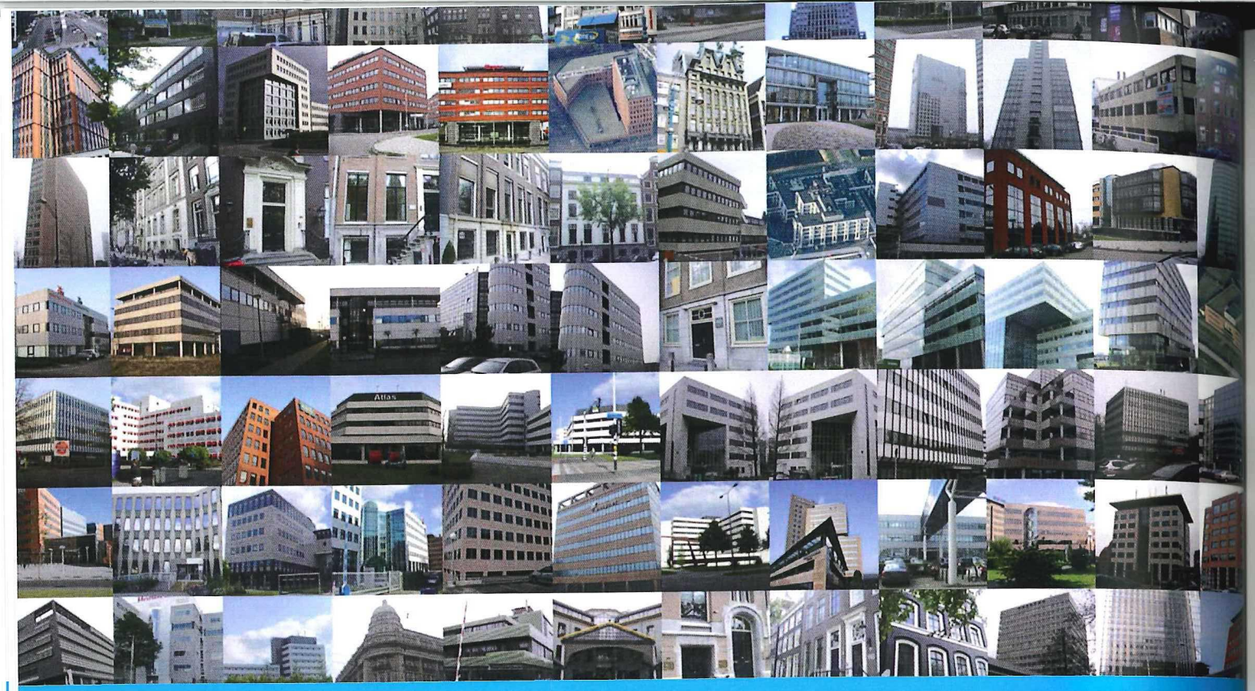

Offices transformed – trend or trouble?

Hilde Remøy

For the last decade, a high level of structurally vacant office buildings has characterised the Dutch real estate market. In 2010 the minister of housing, spatial planning and the environment (VROM), Tineke Huizinga, presented a report on the scale of office vacancy and took the initiative to start a taskforce to reduce the vacancy. The former ministers meddling in the state of the office market is a sign that structural vacancy is seen as a national and societal problem and not only a problem for the owners of vacant property.

Transformation for housing purposes is a way of coping with structurally vacant office buildings. The alternatives are consolidation, renovation, or demolition - possibly with new construction (of another function) on the site. Consolidation is most often chosen as a solution – to do nothing but wait for better times. As locations with several structurally vacant office buildings develop in a downwards spiralling movement structural vacancy also becomes a societal problem. The buildings deteriorate and are devaluated, causing financial loss to the owner and to the municipality by lower taxes and land lease incomes. Enhancing transformation possibilities by facilitating legal processes and developing policies on transformations is the task of the local and national government. Real estate developers, housing associations and housing investors are potentially interested in transformation of structurally vacant office buildings; nevertheless the purchasing price of structurally vacant office buildings is found to be too high by these actors. The valuation of office buildings is based mainly on the potential rent income. As there is no potentially rent income for structurally vacant office buildings, theoretically the value should be zero, or the value of the land minus the costs for demolishing the existing structure. In practice, potential future rent is still used for calculation, using a discount rate to account for vacancy risk. Developers valuate structurally vacant office buildings using a residual cost method. As long as the two ways of calculating the value of structurally vacant buildings do not match, transformations can hardly take place.

Office buildings with cultural-historical, architectural, symbolic, intrinsic values or values of experience are often successfully transformed. The transformation potential of newer office buildings depend more on financial/economic, functional, technical and legal aspects, influencing the feasibility of transformations. As seen in international examples, if the housing market is tight, the housing prices rise and the transformation potential of office buildings increases. The focus on financial feasibility and revenues is easily explained as the

actors in transformation processes are commercial parties. However, to become more sustainable, actors in real estate development and investment should consider transformation more often and weigh financial profit against sustainability goals. Increasing buildings lifespan, e.g. by transformation, is a way of achieving a more sustainable built environment.

Location

The locations of structurally vacant office buildings to a great extent determine the buildings transformation potential. Monofunctional office locations are not found suited for housing, unless the location is transformed as well by adding more housing and facilities to the location. Studies based on ex-post analyses of transformations (Remøy, 2010) have shown that some characteristics of office buildings and locations are specifically important to decide the transformation potential. Also, some characteristics can be defined that point towards the impossibility of transformation, these are so-called veto-criteria (Geraedts & Van der Voordt, 2007). The only location characteristics that could be said to be veto-criteria for residential transformation are noise level at the facade and level of stench and fine dust in the air.

´Veto-criteria for residential transformation are noise level at the facade and level of stench and fine dust in the air´

If the requirements for low noise level and clean air are not met, then residential transformation is not feasible. Other location characteristics are less critical, depending on the target group and the combination of characteristics. However, other housing projects nearby is a "soft factor" that influences the transformation potential. The ex-post analyses that were conducted are located in established housing locations or mixed-use locations. Transformations of buildings in industrial areas were not considered attractive by the housing associations or developers, who are the primary actors initiating most transformations. Still, residential transformations for specific target groups are possible in monofunctional office locations, i.e. if the location is situated near the central business district and near areas with social and commercial facilities.

Building

Though several building characteristics represent potential risks for the legal, functional, technical and cultural feasibility and thus also for the financial feasibility of transformation projects, only one characteristic represents a veto criterion: The floor to ceiling height must equal or exceed 2.6 metres. A building is more easily adapted than its location. The

Figure 1: Transformation Westplantsoen in Delft - from offices to student housing

characteristics of the structure and the floors are the most crucial for the transformation potential. The scale of the structure must allow separation into usable spaces. Office buildings from the 1980s onwards often have a structure that is a multiple of 1.8 metres, such as 7.2 metres, and is well suited for accommodating housing. A specific risk with older office buildings is that measurements and materials used do not always correspond to the construction drawings, and sometimes differ between floors. Another potential risk with older buildings is poor maintenance and deterioration of the structure, e.g. concrete rot.

Facade characteristics influence the transformation potential of office buildings significantly. Though the facade is often adaptable, all adaptations imply extra building costs, and hence reduce the financial feasibility of a transformation. As the requirements for thermal and acoustic insulation are higher for housing than for offices, adaptations of the facade are needed in most transformation projects. Finally, the image of outdated office buildings does not always trigger positive reactions from potential residents. Though some office buildings are listed monuments or renowned buildings that have a specific image or are even able to provide a specific identity to a whole neighbourhood, most office buildings are ordinary and have

an image strongly related to office work. In such cases, the facade is often replaced, even if it is technically well maintained and meets the requirements for housing. The location and building characteristics that have a negative influence on the residential transformation potential of office buildings can be summarised and presented as a checklist.

See table 1 and 2 for Location and building characteristics that enhance the transformation potential, adopted from Geraedts and Van der Voordt (2007) and Remøy (2010).

Remøy (2010) studied the transformation potential of a sample of 100 office buildings in Amsterdam with some level of structural vacancy. The potential was defined through a stepwise hierarchical study of the market, location and building characteristics, including the purchasing price of apartments and the location and building veto-criteria mentioned above.

´Transformation of office buildings in monofunctional locations was only regarded possible if the location as a whole would be transformed´

In this study the financial feasibility of residential transformations was decided based on general building characteristics, and a worst case scenario of the building costs was anticipated based on the highest level that was found in the ex-post case studies by Van der Voordt et al (2007). In a more detailed study, the influence of technical and functional issues on the transformation potential could be assessed. Within the given limitations, transformation is the best strategy for coping with structural vacancy in 40% of the cases. However, monofunctional office locations will need extra attention as the transformation potential of buildings in these locations also depends on the willingness of actors in transformation processes to invest in these locations. Moreover, investors and owners of office buildings still need to be convinced of the opportunities of transformation. Interviews with commercial developers and housing associations (Remøy, 2010) showed that the location characteristics were found to have the most influence on the transformation opportunities. The purchasing price was found to be the most important transformation obstacle. Transformation of office buildings in monofunctional locations was only regarded possible if the location as a whole would be transformed. The most important aspects mentioned to influence the residential transformation potential of office buildings are:

- the demand for housing
- the segregation of real estate markets; actors roles
- the purchasing price of office buildings for transformation
- the buildings' location characteristics
- the building characteristics
- the transformation building costs

In the Netherlands, the housing demand is high, and in some locations the housing prices are higher than the office rent. In these locations residential transformation is especially interesting. However, the real estate market is segregated and office investors are not keen on or not able to invest in the housing market. Investors who are interested in transformation have the choice of transforming for sale or appointing the narrow private rental market. Housing associations on the other hand have no interests in the office market, but see residential transformation of office buildings as an interesting way of acquiring central urban locations. The same goes for housing developers for whom the most important transformation triggers are revenues and acquisition possibilities. Office investors may choose to sell obsolete office space to housing associations or real estate developers. This way, they can reinvest their profit in new office buildings. The price for obsolete office buildings is often too high for transformation to be feasible, while owners are not eager to sell buildings with financial loss.

Figure 2: Transformation Churchilltorens - from offices to apartments

LOCATION	CRITERION
FUNCTIONAL	
Urban location	Mixed use or housing location
Distance and quality of facilities	Shops for daily necessities < 500 m
	Public meeting space (square, park) < 500 m
	Restaurant/cafe < 500 m
	Education, sports, basic medical facilities < 1 km
Public transport	Distance to railway station < 1 km
	Distance to bus/metro/tram < 250 m
Accessibility by car and parking	Distance to parking place <100m
	>1 parking place per housing unit
CULTURAL	
Status of neighbourhood	Situated near city centre or subcentre
	Housing nearby
	Public space in neighbourhood
	Area has good reputation
	No noise or stench (factories, trains, cars)
LEGAL	
Environment	Noise load on facade < 50 dB (limit for offices 60dB)
	Level of fine dust below norm

Table 1: Location characteristics

BUILDING	CRITERION
FUNCTIONAL	
Features of new housing	>20 units of minimal 100 m^2 can be realised
	Suitable layout for selected target group
Extendibility	Horizontally or vertically extendable
TECHNICAL	
Maintenance	Well maintained, durable structure
Structure dimension	Structural grid >3.6m
	Distance between floors >2.6m and <3.6m or >5.5m
Support structure	In good condition, sufficient for housing
Facade	Adaptive, possible to attach interior walls
Installations	Possible to fit vertical ventilation shafts
CULTURAL	
Character	Characteristic building or positive image
	Adaptable image
LEGAL	
Environment	Good acoustic insulation exterior and interior
	Good thermal insulation
	Sufficient daylight; more than 10% of equivalent floor area
	Elevators in buildings higher than 4 floors
	Sufficient (emergency) stairways

Table 2: Building characteristics

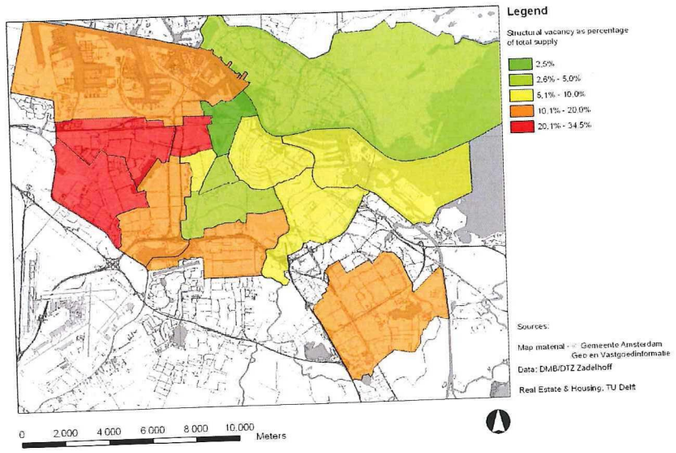

Figure 3: Areas in Amsterdam with vacancy

However, as the market value of an office building is related to its potential yield, investors need to consider realistic and convincing future yields to realise a credible market value for their structurally vacant properties. When refusing to devaluate their properties, a basic principle from general economic theory seems forgotten: never consider the investments made (sunk costs); only the possible future yields.

70% of the office buildings in the Netherlands are located in monofunctional office locations. Studying Amsterdam, many of the buildings are located in locations with no adjacent housing locations and no facilities. In general, the accessibility of the locations is good, both by car and by public transport. Possible scenarios for residential transformations in these areas are developments starting at the edges of the locations, developments in phases starting with the addition of facilities, the "ink stain" development method, or integral urban developments. While the last option could be successful, it comes with high risk as it requires high investments up front while the revenues are postponed. Redeveloping monofunctional locations and transforming buildings in these locations demand cooperation between the different stake holders. Investors and owners should depreciate their properties to a realistic value and invest in redevelopment initiatives. Innovative developers are needed to initiate these redevelopments, and municipalities must contribute as facilitators. Additionally, municipalities can contribute to the success of redevelopment by putting an end to the expansion of new office locations. Only this way, the societal problem of structural vacancy can be coped with. As long as new office locations are being developed, transformation will resemble emptying the ocean with a thimble.

Sources and suggestions for further reading:

Geraedts, R. P., & Van der Voordt, D. J. M. (2007). Transformationmeter. In D. J. M. Van der Voordt, R. Geraedts, H. Remøy & C. Oudijk (Eds.), Transformatie van kantoorgebouwen thema's, actoren, instrumenten en projecten (pp. 480 blz.). Rotterdam: Uitgeverij 010.

Remøy, H. (2010). Out of office, a study of the cause of office vacancy and transformation as a means to cope and prevent. Amsterdam: IOS.

Van der Voordt, D. J. M., Geraedts, R. P., Remøy, H., & Oudijk, C. (Eds.). (2007). Transformatie van kantoorgebouwen thema's, actoren, instrumenten en projecten. Rotterdam: Uitgeverij 010.

Hilde Remøy

Dr Hilde Remøy MSc Arch is assistant professor of Real Estate Management at the faculty of Architecture of the Delft University of Technology at the department of Real Estate & Housing. Her main focus of research is adaptation and transformation of office buildings.