NOW HIRING

WANTED: USER OF TOMORROW FOR SPACE OF THE FUTURE

A management decision support system for the value-add and core-plus office investor to determine the future use of vacant offices

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Graduation research presentation
9th April, 2014

First mentor: Hilde Remøy
Second mentor: Philip Koppels
Third mentor: Ruud Binnekamp
External Examiner: Remon Rooij

Graduation company:
Nieuwe Steen Investments
Supervisor: Johan Buijs
'Kantoor zonder cashflow is nul euro waard'

Passief wachten op huurders werkt niet

Vastgoedauteur en visionair Cees van Beukering:
'We innoveren ons uit de crisis'
CONTENT

>> INTRODUCTION
Problem area
Conceptual model
Research question

>> RESEARCH CONTEXT
Real estate market
Focus investor

>> PORTFOLIO MANAGEMENT
Vacancy
NSI

>> VACANCY MANAGEMENT
Costs of vacancy
Delphi study
Quadrant

>> MDSS
Preference measurement
Example: Oude Middenweg
Decision structure
Comparison study

>> CONCLUSION

>> RECOMMENDATIONS
Value-add and core-plus investors
Further research

0% Introduction Research Context Portfolio Management Vacancy Management MDSS 100%
INTRODUCTION | VACANCY

OVERPRODUCTION & OVERSUPPLY

ca. 8 million sqm supply
4,9% increase in last year

BUYERS’ MARKET

REPLACEMENT MARKET
Investor’s thinking: ‘**Tomorrow will be better**’ is no longer working

>> Active management of vacancy
INTRODUCTION | CONCEPTUAL MODEL

OFFICE PORTFOLIO OF INVESTOR

Categorization promising, mediocre and deprived

Fitness For Use

Mediocre  Promising

Deprived  Mediocre

Direct Return on Investment

Based on category: review of the portfolio and object, and defining forecast and strategy

Disposal  Consolidation  Within Use Adaptation  Conversion

Based on score of ‘Within Use Adaptation’ and ‘Conversion’: Selection of best alternative object strategy

FUTURE USE OF (PARTLY) VACANT BUILDING
What are the criteria for the determination of the fitness for use, and within-use adaptation and conversion possibilities of vacant office buildings at portfolio level from the perspective of an investor?

In what way can a management decision support system be deployed to enhance vacancy management at portfolio level?

Subquestions in 4 themes:

- Research Context
- Portfolio Management
- Vacancy Management
- Management Decision Support System
* Depreciation of office buildings
* Structural change in real estate market
* Strong negotiating power of tenant
* Change of strategy of investors
RESEARCH CONTEXT | FOCUS INVESTOR

* Focus upon Core-plus and Value-add investors
* Investment opportunities during contraction phase
* Value generation in growth phase
* NSI is listed core-plus and value-add investor directly investing in real estate
* A characteristic of real estate portfolios is the **diversification of assets** and investments

* The **financial feasibility** is one of the main criteria determining the real estate strategy

* Core-plus and value-add investors seem to focus on **risky** but **high return** investments

* Managing includes real estate **acquisitions, disposal and restructuring** of the portfolio

* Vacancy can lead to a **reduction of return on investment** and even a negative cashflow of the portfolio

>> Investors become aware of the **threat of vacancy** on the portfolio
PORTFOLIO MANAGEMENT | NSI

* Two activities: Asset management and Tenant management
* Financial objectives: Feasibility of the portfolio determined by the direct return on investment (total return strategy)
* Non-financial objectives: Corporate Social Responsibility
  
  Developing ‘Het Nieuwe Kantoor’ (HNK)
  
  Core and value-add real estate (5.000 - 15.000 sqm)
  
  Disposing offices with no value adding opportunities

>> Insight in Qualitative and Quantitative mis-match of offices
Vacancy costs consist of constant and variable costs
    Main costs are: Service, Gas, Electricity and maintenance costs

Turning point from negative to a positive cashflow is an occupancy rate of ca. 30%

Combining tenants of half empty buildings into one can reduce vacancy costs

Case study: Vareseweg 105 - 109
Categorization of the office building into promising, mediocre or deprived to determine strategy for future use.
VACANCY MANAGEMENT | DELPHI STUDY

* Three partial Delphi studies: Fitness For Use, Within Use Adaptation, Conversion

* Determining criteria based on literature study, consultation mentors, consultation NSI

* Weighting of selected criteria on: Market level, Location & Building level

* Two rounds

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**DELPHI PANEL 1 Fitness For Use**

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academics Professor / PhD teacher at real estate related education</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Asset management</td>
<td>3</td>
</tr>
<tr>
<td>Practioners Portfolio management</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Asset valuation</td>
<td>2</td>
</tr>
<tr>
<td>Practioners Project development</td>
<td>1</td>
</tr>
<tr>
<td>Governmental officials Municipality</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**DELPHI PANEL 2 Within Use Adaptation**

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academics Professor / PhD teacher at real estate related education</td>
<td>2</td>
</tr>
<tr>
<td>Practioners Consultancy</td>
<td>3</td>
</tr>
<tr>
<td>Practioners Asset management</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Portfolio management</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Project development</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Architects</td>
<td>2</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>10</strong></td>
</tr>
</tbody>
</table>

**DELPHI PANEL 3 Conversion**

<table>
<thead>
<tr>
<th>Expertise</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academics Professor / PhD teacher at real estate related education</td>
<td>2</td>
</tr>
<tr>
<td>Practioners Consultancy</td>
<td>3</td>
</tr>
<tr>
<td>Practioners Project development</td>
<td>1</td>
</tr>
<tr>
<td>Practioners Architects</td>
<td>2</td>
</tr>
<tr>
<td>Governmental officials Municipality</td>
<td>1</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
Panelstudie 1: Fitness for use

FACTOREN LOCATIE & GEBOUW

1. Geografische ligging | 6 %
2. Bereikbaarheid openbaar vervoer | 24 %
3. Bereikbaarheid met de auto | 8 %
4. Concentratie structurele leegstand in de omgeving | 15 %
5. Parkeergelegenheid | 6 %
6. Voorzieningen in directe omgeving | 17 %

1. Ruimtelijke en functionele kwaliteit van de omgeving | 0 %
2. Bezettingsgraad-ontwikkeling | 1 %
3. Identiteit en uitstraling van het gebouw | 0 %
4. Functionele kwaliteit/flexibiliteit | 14 %
5. Energie prestatie van het gebouw | 0 %
6. Technische kwaliteit van het gebouw | 9 %

Totaal

Pas wanneer u alle 100% heeft verdeeld en alle factoren zijn voorzien van een weging, kunt u rechts onderaan uw weging bevestigen.
VACANCY MANAGEMENT | DELPHI STUDY

FITNESS FOR USE

Market level

<table>
<thead>
<tr>
<th>Lettability and competitive power</th>
<th>Office market dynamics</th>
<th>Possibilities of the land-use plan</th>
</tr>
</thead>
</table>

Location and Building level

<table>
<thead>
<tr>
<th>Geographical location</th>
<th>Functional quality / flexibility</th>
<th>Identity and image of the building</th>
<th>Accessibility by public transport</th>
<th>Facilities in direct surrounding</th>
<th>Spatial and visual quality of the site</th>
<th>Parking facilities</th>
<th>Accessibility by car</th>
<th>Technical quality of the building</th>
<th>Occupancy development</th>
<th>Concentration structural vacancy in the surrounding</th>
<th>Energy performance of the building</th>
</tr>
</thead>
</table>

0% | 10% | 20% | 30% | 40% | 50% | 60% | 70% | 80% | 90% | 100% |
VACANCY MANAGEMENT | DELPHI STUDY

WITHIN USE ADAPTATION

Market level

Location and Building level

- Changing demand from target group
- Lettability and competitive power
- Financial possibilities
- Occupancy development

- Flexibility of the lay-out
- Geographical location
- Identity and image of the building
- Technical quality of the building
- Accessibility by car
- Accessibility by public transport
- Technical adaptability building elements
- Parking facilities
- Energy performance of the building
- Concentration structural vacancy in the surrounding
- Facilities in direct surrounding

0% 100%

Introduction Research Context Portfolio Management Vacancy Management MDSS
VACANCY MANAGEMENT | DELPHI STUDY

WITHIN USE ADAPTATION

Market level

Location and Building level

Geographical location
Flexibility of the lay-out
Accessibility by public transport
Spatial and visual quality of the site
Facilities in direct surrounding
Identity and image of the building
Accessibility by car
Parking facilities
Adaptability of the façade
Concentration structural vacancy in the surrounding
Technical quality of the building
Energy performance of the building

Demand for other function
Presence of external initiator
Financial possibilities
Occupancy development
Possibilities within the land-use plan
Contribution to CSR

0% 10% 20% 30% 40% 50% 60%
## Location and Building level

<table>
<thead>
<tr>
<th>Fitness For Use</th>
<th>Within Use Adaptation</th>
<th>Conversion</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOP 3</strong></td>
<td><strong>TOP 3</strong></td>
<td><strong>TOP 3</strong></td>
</tr>
<tr>
<td>Geographical location</td>
<td>Flexibility of the lay-out</td>
<td>Geographical location</td>
</tr>
<tr>
<td>15,2%</td>
<td>14,1%</td>
<td>19,8%</td>
</tr>
<tr>
<td>Functional quality / flexibility</td>
<td>Geographical location</td>
<td>Flexibility of the lay-out</td>
</tr>
<tr>
<td>12,1%</td>
<td>12,0%</td>
<td>11,1%</td>
</tr>
<tr>
<td>Identity and image of the building</td>
<td>Identity and image of the building</td>
<td>Accessibility by public transport</td>
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<tr>
<td>9,9%</td>
<td>10,0%</td>
<td>10,3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>LOWEST 3</strong></th>
<th><strong>LOWEST 3</strong></th>
<th><strong>LOWEST 3</strong></th>
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</thead>
<tbody>
<tr>
<td>Occupancy development</td>
<td>Energy performance of the building</td>
<td>Concentration structural vacancy in the surrounding</td>
</tr>
<tr>
<td>5,3%</td>
<td>4,9%</td>
<td>5,2%</td>
</tr>
<tr>
<td>Concentration structural vacancy in the surrounding</td>
<td>Concentration structural vacancy in the surrounding</td>
<td>Technical quality of the building</td>
</tr>
<tr>
<td>4,9%</td>
<td>4,8%</td>
<td>3,9%</td>
</tr>
<tr>
<td>Energy performance of the building</td>
<td>Facilities in direct surrounding</td>
<td>Energy performance of the building</td>
</tr>
<tr>
<td>4,7%</td>
<td>4,1%</td>
<td>2,0%</td>
</tr>
</tbody>
</table>
VACANCY MANAGEMENT | DELPHI STUDY

WITHIN USE ADAPTATION versus CONVERSION

Location and Building level

- Flexibility of the layout
- Geographical location
- Identity and image of the building
- Technical quality of the building
- Accessibility by car
- Spatial and visual quality of the site
- Accessibility by public transport
- Technical adaptability of building elements
- Parking facilities
- Energy performance of the building
- Concentration structural vacancy in the surrounding
- Facilities in direct surrounding

The chart shows the percentage of factors considered in Within Use Adaptation and Conversion. The factors are ranked based on their importance in decision-making.
Oude Middenweg, Den Haag

* Main qualities:
  - Accessibility by car
  - Parking facilities
  - Flexibility of the lay-out
  - Technical quality of the building

* Score FFU, WUA and CONV based on criteria Delphi study

![Diagram showing Fitness For Use (FFU), Average Portfolio, Desired Direct Return on investment (DROI), WUA, CONV]
Vacancy management is Preference measurement

Preference measurement enables the construction of a mathematical model of the decision-makers' preferences based on:
- correctly importing weights and relative importance
- proper measurement scales

```
Criteria
C1   C2    C..   Cn
Weighing
W1   W2    W..   Wn
Alternatives
A..   A..   Am
Scores
S1,1  S1,2  S1..  S1,n
S..,1  S..,2  S..,..  S..,n
Sm,1  Sm,2  Sm..  Sm,n
Preference Rating
R Σ^n i=1 S1,i Wi
R Σ^n i=1 S..,i Wi
R Σ^n i=1 Sm,i Wi
```

Selecting the best alternative
MDSS | EXAMPLE

Oude middenweg, Den haag

* Category: Mediocre high FFU and low DROI

**FITNESS FOR USE**

<table>
<thead>
<tr>
<th>Criteria</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>C6</th>
<th>C7</th>
<th>C8</th>
<th>C9</th>
<th>C10</th>
<th>C11</th>
<th>C12</th>
</tr>
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<tbody>
<tr>
<td>Geographical location</td>
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<td>Accessibility public tr.</td>
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<td>Accessibility by car</td>
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<td>Struct. vacancy in surr.</td>
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<td>parking facilities</td>
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<td>facilities in direct surr.</td>
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<td>Spatial &amp; visual qual.</td>
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<td>Occupancy develop.</td>
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<td>Identity and image</td>
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<td>Functional quality</td>
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<td>Energy performance</td>
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<td>Technical quality</td>
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</tbody>
</table>

Weighing in %: 15,2, 9,6, 7,1, 4,9, 8,1, 8,5, 8,5, 5,3, 9,9, 12,1, 4,7, 6,1

SCORE: 12, 78, 96, 100, 99, 55, 60, 57, 65, 100, 100, 80

Preference rating $R_1 = 70.4$
Oude middenweg, Den haag

OR: 36%, DROI: 4,69%

Scores: FFU: 70,4, WUA: 75,8, CONV: 67,3

>> Within Use Adaptation: ‘Het Nieuwe Kantoor’
  * Changing demand for office space
  * Low competition in direct surroundings
  * Financial possibilities to invest
  * Development of HNK in different regions
  * Large flexible building (15.000 sqm)

Weaknesses:
  * Many similar concepts in Den Haag
  * Location outside the city centre
  * Attractiveness of the entrance
1. PROMISING FFU ↓ DROI ↑

- Arthur van schendelstraat, Utrecht
- Scores: FFU: 87,9 WUA: 86 CONV: 83,3
- Main qualities:
  - Competitive power;
  - Location city centre and station;
  - Parking facilities;
  - Facilities in direct surroundings.

2. MEDIocre FFU ↑ DROI ↓

- Oude middenweg, Den Haag
- Scores: FFU: 70,4 WUA: 75,8 CONV: 67,3
- Main qualities:
  - Accessibility by car;
  - Parking facilities;
  - Flexibility of the lay-out;
  - Technical quality of the building.

3. MEDIocre FFU ↓ DROI ↑

- Volmerlaan, Rijswijk
- Scores: FFU: 52 WUA: 52,3 CONV: 58,3
- Main qualities:
  - Location nearby city centre;
  - Accessibility by car & public transport;
  - Parking facilities.

4. DEPRIVED FFU ↓ DROI ↓

- Oude middenweg, Den Haag
- Scores: FFU: 59,8 WUA: 59,8 CONV: 60,9
- Main qualities:
  - Multi-functional location;
  - Accessibility public transport;
  - Accessibility by car;
  - Spatial and visual quality.
<table>
<thead>
<tr>
<th>Location</th>
<th>Address</th>
<th>Lm² LFA</th>
<th>OR</th>
<th>FFU</th>
<th>WUA</th>
<th>CONV</th>
<th>Category based on model</th>
<th>Future use</th>
<th>Main location and building qualities</th>
<th>Future use</th>
<th>Strategy NSI</th>
<th>Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heerlen</td>
<td>Geerstraat 105-111</td>
<td>3049</td>
<td>100%</td>
<td>80,1</td>
<td>76,2</td>
<td>80,2</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Location, Accessibility, Parking facilities, facilities direct surrounding</td>
<td>Consolidation</td>
<td>Continue letting. UWV largest tenant till end of 2016</td>
<td>+</td>
</tr>
<tr>
<td>Eindhoven</td>
<td>Fellenoord 310-370</td>
<td>4113</td>
<td>91%</td>
<td>75,9</td>
<td>70,6</td>
<td>76,7</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Geographical location, accessibility public transport, Identity/image of the building, flexibility</td>
<td>Consolidation / renovating</td>
<td>Continue letting. Investing to stimulate rent (exterior and interior). Per may 1st, ca. 2000 sqm vacancy (ca. 50%).</td>
<td>++</td>
</tr>
<tr>
<td>Eindhoven</td>
<td>Larixplein 5-7</td>
<td>3874</td>
<td>100%</td>
<td>74</td>
<td>71,8</td>
<td>71,4</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Geographical location, accessibility public transport, Parking facilities, Functional quality, energy performance</td>
<td>Consolidation</td>
<td>Occupancy rate of 100%, Possible extension of parking places in 2014 requested by tenants.</td>
<td>+</td>
</tr>
<tr>
<td>Den Bosch</td>
<td>Europalaan 28</td>
<td>7521</td>
<td>49%</td>
<td>57,5</td>
<td>58,7</td>
<td>60,2</td>
<td>4 Deprived</td>
<td>Within Use</td>
<td>Accessibility, Parking facilities, Identity and image of the building, Energy performance</td>
<td>Within Use</td>
<td>Adaptation / Upgrading</td>
<td>++</td>
</tr>
<tr>
<td>Eindhoven</td>
<td>Luchthavenweg 34</td>
<td>1972</td>
<td>100%</td>
<td>68,1</td>
<td>67,3</td>
<td>66,8</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Accessibility by car, Parking facilities, Facilities in direct surrounding, Spatial and visual quality, Identity and image, Flexibility</td>
<td>Disposal</td>
<td>Rented out with option to buy. It is expected that the tenant will buy the property before July 2014.</td>
<td>-</td>
</tr>
<tr>
<td>Breda</td>
<td>Lage Mosten 1-11</td>
<td>3187</td>
<td>81%</td>
<td>80,6</td>
<td>79,8</td>
<td>76,5</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Accessibility, Parking facilities, Spatial and visual quality, Identity and image of the building, Flexibilit, Energy performance, Technical quality</td>
<td>Consolidation / renovating</td>
<td>Continue letting. Focus on renting out ground floor and first floor. Small investment in the ground floor (emptying).</td>
<td>++</td>
</tr>
<tr>
<td>Breda</td>
<td>Lage Mosten 13-23</td>
<td>3831</td>
<td>100%</td>
<td>80,4</td>
<td>78,5</td>
<td>75,4</td>
<td>1 Promising</td>
<td>Consolidation</td>
<td>Accessibility, Parking facilities, Spatial and visual quality, Identity and image of the building, Flexibilit, Energy performance, Technical quality</td>
<td>Consolidation</td>
<td>Continue letting. Tenant prefers to leave before the end of the contract. Subletting is possible.</td>
<td>+</td>
</tr>
<tr>
<td>Maastricht</td>
<td>Adelbert van Scharlmaan 170-180</td>
<td>3953</td>
<td>50%</td>
<td>56,8</td>
<td>56,8</td>
<td>61,4</td>
<td>3 Mediocre</td>
<td>Conversion / Disposal</td>
<td>Geographical location, accessibility, Parking facilities, Energy performance</td>
<td>Disposal</td>
<td>Sale (has been devaluated). No plan present. Focus on creation of plan and potenions. Letting in current condition difficult.</td>
<td>+</td>
</tr>
<tr>
<td>Tilburg</td>
<td>Dr. Hub van Doornweg 81, 85 en 89</td>
<td>2657</td>
<td>43%</td>
<td>55,5</td>
<td>57,7</td>
<td>59,9</td>
<td>4 Deprived / 3 Mediocre</td>
<td>Within Use</td>
<td>Parking facilities, Spatial and visual quality of the site, energy performance of the building</td>
<td>Consolidation / Disposal</td>
<td>Continue letting. When interest in the property, possible sale.</td>
<td>+</td>
</tr>
</tbody>
</table>
MDSS | COMPARISON STUDY EINDHOVEN

Consolidation
Small upgrading
Disposal
Upgrading
Within Use Adaptation

Introduction Research Context Portfolio Management Vacancy Management MDSS
CONCLUSION

>> The thorough literature study and three Delphi studies managed to indicate the decision-making criteria and their relative importance of the office investor.

>> Vacancy management enables insight in the qualitative and quantitative (mis-)match on portfolio level.

>> Based on the Delphi studies, buildings are compared and rated to describe the possibilities for different types of future use.

>> This research supports the establishment of a strategy for an (vacant) office building within the portfolio, leading to a practical framework for vacancy management for the value-add and core-plus investor.

>> This research presented a Management Decision Support System that adds value to the current decision-making of the value-add and core-plus office investor by by presenting different possible alternatives.
RECOMMENDATION | INVESTOR

>> The MDSS model can be used in the creation object strategies for future use of the office building

>> This research supports detailed considerations on portoflio level for future use of offices

>> Both the quadrant and the score of office buildings upon different criteria can be used for hold/sell analysis

>> The relative importance of criteria can support the decision-making for investment in new offices

>> The development of offices in the portfolio can be monitored over several years to support forecasting and decision-making for future use
RECOMMENDATION | FURTHER RESEARCH

>>> Further research from **the perspective of the office user** concerning the same research topic is desired

>>> Further research into **the financial performance of (partly) vacant office buildings** is desired to support strategy determination

>>> The defined actions based on the quadrant of the MDSS model ask for **more detail and definition of the way of execution**
QUESTIONS?