Roles and Governance in Dutch Office Conversion Projects

Exploring the collaboration between project actors

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Preface

The report you are currently viewing is the final document related to my MSc degree Construction Management and Engineering at Delft University of Technology. Within this report, the outcome of my graduation process is gathered. I purposely use the word 'process' rather than 'product' because I very much feel that the past 10 months have been a process of learning in more ways than one and not just the creation of this report. I joined DTZ Zadelhoff Property Management and the department Property Transformers in December 2015 with the goal of solving the problem of office vacancy in the Netherlands through contract integration. After some time, this proved to be a little too ambitious an effort to encompass in one graduation thesis. Constructive discussions with my mentors at DTZ Zadelhoff and at TU Delft resulted in an evaluation of project roles and project governance within office conversion projects in the Netherlands being chosen as the eventual research subject.

The research question which is used to research this topic is as follows. **Which project governance structures and subsequent division of project roles among actors is suited for Dutch office conversion projects?**

In terms of learning, I have gained new knowledge on both how to carry out scientific research as well as on the Dutch real estate market. With office conversions and how to set about managing them being a hot topic at the time of writing, I was privileged to be able to talk to experienced Real Estate Developers, Contractors and Architects alike. Even though my knowledge on management of real estate project and office conversions was limited at the time of starting this research, I did not perceive this as a limitation. It helped me approach the exploratory nature of this research with an open mind and limited preconceptions, which is not something I'm usually able to do. Obviously, I could not have completed this process without the aid of several people. As all of them speak Dutch, I will formulate my thanks accordingly.

Om te beginnen een woord van dank aan de leden van mijn afstudeercommissie vanuit de TU Delft. Monika, ondanks dat het onderwerp van mijn onderzoek gedurende het proces afweek van je eigenlijke vakgebied, hoop ik dat ik het gebied van verdeling van aansprakelijkheid onder projectactoren een zinvolle bijdrage heb kunnen leveren. Hiernaast tevens dank voor je input bij het opzetten van het empirisch onderzoek en het vinden van een passende data-analyse. Hilde, dank voor de hulp bij het vergroten van mijn kennis van de Nederlandse vastgoedmarkt, de relevante aspecten van transformatieprojecten en het sturen van deze voor mij als infra-student nieuwe materie. Leon, naast het feit dat je kennis en kunde op het gebied van samenwerkingsvormen binnen de bouw mij heeft geholpen, tevens dank voor de praktische (en opbouwend kritische) adviezen over mijn werkmethode en mijn neiging tot het opzetten van oogkleppen.

Naast de commissie vanuit de TU, zijn ook een aantal mensen binnen DTZ Zadelhoff die ik dank verschuldigd ben. Tom, in de eerste plaats dank voor het geduld dat je op hebt moeten brengen in de periode waarin ik mijn afstudeercommissie aan het vormen was. Hiernaast was je ervaring en input over de Nederlandse vastgoedmarkt van grote waarde bij het vinden van de essentie van mijn onderzoek. John, dank je voor je positief kritische feedback op het onderzoek en je sturing om het geheel niet onnodig complex en moeilijk te maken. Patricia, je hulp met betrekking tot het opzetten van een logisch lopend rapport en algehele stagebegeleiding heeft uiteindelijk tot een beter en mooier resultaat geleid, dank hiervoor. Het dagelijks mogen werken naast de collega's van DTZ op de afdeling Property Transformers hield mij scherp en zorgde ervoor dat ik iedere morgen met energie (en koffie) weer aan een nieuwe onderzoeksdag kon beginnen.

Bij het vergaren van informatie waren de interviewkandidaten onmisbaar in de door hen gedeelde ervaringen. Ik kan hier geen namen noemen, maar dank aan jullie allen voor de openheid waarmee jullie wilden spreken. Naast deze inhoudelijk hulp zou ik dit proces op een andere wijze hebben doorlopen zonder de steun van mijn ouders. Zonder de ontwerpvaardigheid van Alex zou de lay-out er minder aantrekkelijk uitgezien hebben. Ik sluit dit zoetsappige lijstje af met een woord van dank aan de studiegenoten van CME met wie ik heb kunnen sparren over inhoud en structuur. Het gebruikmaken van jullie ervaringen heeft mij over menig hobbel heen geholpen.

Cheers and I sincerely hope you have an informative and enjoyable read.

Maarten Gaasenbeek
Delft, October 2016

Executive Summary

Since the start of the economic downturn in 2008, owners of office buildings have been faced with an increased level of vacancy. This has resulted in market actors and governments alike launching initiatives to promote the conversion of vacant office buildings into a hotel or into a residential function. The perception across existing literature is that conversion initiatives are more complex than comparable new built real estate projects and that a devaluation by the asset owner is required in order to make a conversion initiative financially feasible.

With a larger focus on conversion initiatives, an increasing amount of actors view themselves as suitable partners in conversion initiatives. The traditional project governance structure in which a real estate developer obtains temporary ownership of a building is still the foundation of conversion projects according to literature. With architects, contractors and advisors each looking for their own respective role in conversion initiatives, it could be beneficial to create an overview of project roles. Besides, advice will be provided to actors on how they are able to appropriate the most suitable position based on their own capabilities and the governance tasks related to conversion projects.

Research Objective and Research Question

The situation described above constitutes the question of which actor is suitable to take up which distinctive project role and which project governance structures are suited to govern conversion projects. In order to carry out the research, the following **research objective** is used.

With different types of parties taking up distinctive roles and risks in a project setting, an opportunity arises for assessing the possibilities for a project arrangement and role division tailored to the current Dutch office conversion market. This type of project arrangement should have an increased fitness for purpose over the current project structure. I will aim to expand the existing knowledge on the project governance structures in relation to the distinctive roles which have to be filled in Dutch office conversion projects. The goal is to formulate recommendations aimed at the manner in which governance of project roles may be optimised.

The aim of this research is to explore the diversity of project roles and project governance structures used in Dutch office conversion project. To achieve this goal, the following **main research question** is used.

Which project governance structures and subsequent division of project roles among actors is suited for Dutch office conversion projects?

Methodology

The research is split in two segments. First of all, a two-step literature study is carried out. The problem definition is created by a narrative literature study into the current market dynamics in office vacancy and conversion initiatives. The second phase of the literature study consists of a detailed review of existing literature on project roles-, project actors- and project governance in office conversion projects.

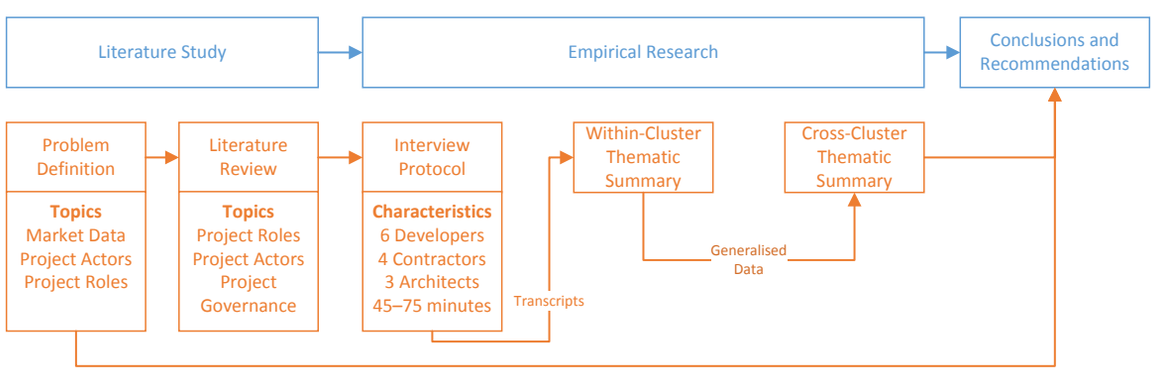

Figure 1: Overview research methodology (Own Illustration)

The methodology of the empirical research consists of a series of thirteen expert interviews, six of which with real estate developers, four with contractors and three with architects. Each of the interviewees had demonstrable experience in conversion projects. The series of interviews focussed on gathering the perception of real estate developers, architects and contractors in the division of project roles in office conversion projects. In order to translate the perceptions and experiences of the interviewees into conclusions and recommendations, the data analysis was carried out in three phases. Firstly, each of the audio recordings was documented in a transcript. The second phase consisted of drafting three detailed within-cluster summaries (for real estate developers, contractors and architects) based upon direct quotes from the interviews. The third and final phase of data analysis was condensing the views of the within-clusters summaries into one cross-cluster summary which compares the views of each of the consulted actor groups. Direct quotes from the transcript are omitted from the outcome in main report due to anonymity request from respondents.

Outcome

The outcome of this research points towards the following differences in perception of project roles and governance between existing literature and empirical data.

1. The empirical data outlined the need to split the 'Developer' role into the project roles 'Risk-Bearing Developer' and 'Fee Developer'.
2. The existence of a separate project role 'Initiator', which is mentioned often in literature, could not be confirmed in the empirical research.
3. The willingness and ability of the larger Dutch contractors to bear development risk for conversion projects caused the addition of the 'Developing Builder' role alongside the 'Builder' role.

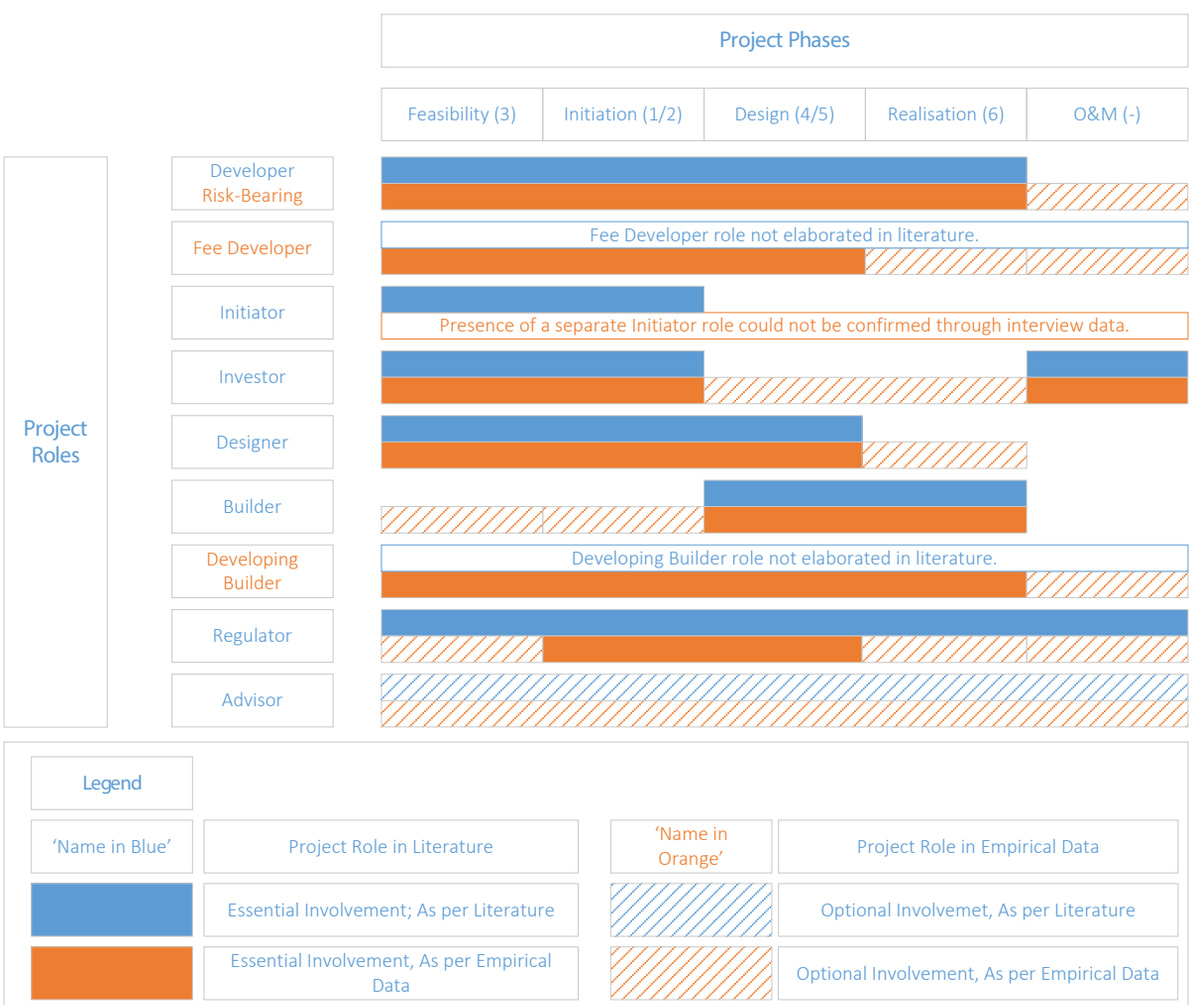

Figure 2: Comparison project roles in literature versus empirical data. (Own illustration, literature findings based upon references in figure 15)

Based upon the empirical research, the main research question is answered in the following manner.

Governance in office conversion project can be carried out under a Risk-Bearing Developer structure, a Fee Developer structure or a Developing Builder structure. *The Risk-Bearing Developer structure is characterised by acquisition of asset ownership by a real estate developer (client). Fee development consists of a real estate developer (delegated client) carrying out limited liability project management for a continuous asset owner (client). The Developing Builder structure consists of a main contractor (delegated client) bearing development risk for a continuous asset owner.*

The main driving forces behind the decision for a specific structure are.

- *If an asset owner does not want or is unable to retain ownership of the asset, only a Risk-Bearing Developer structure is applicable.*
- *If an asset owner wants to retain owner ownership of the asset, the Fee Developer structure and Developing Builder structure are the most suitable options.*
- *Allocation of the development- and realisation risk due to fiscal legislation (applicable to pension funds) impacts if the Fee Developer structure or a Developing Builder structure is the most suitable.*
- *Whether or not a guaranteed sale is in place at the time of the entry decision determines involvement of either a real estate developer or a contractor. Real estate developers can bear development risk both with- and without a guaranteed sale. Contractors mention to only bear development risk when sale is guaranteed.*

In the allocation of projects roles, the real estate developer is suitable to serve as either a fee developer or combined risk-bearing developer/temporary asset owner. The contractor can serve as either a traditional builder or as a developing builder. The architect is noted to only be suitable to fill the designer role, without a perceived necessity to expand its portfolio.

Besides the outcome which could be clustered under the main research question, several unexpected topics and insights concerning project roles in office conversions were put forward. The first being the perceived increase in demand for space in recent years (2014 – 2016), which complicates the decision between a conversion with change of function or to carry out a renovation. A second unexpected insight concerns the current system of to land-use plan procedures. Respondents note that implementing a more flexible system based upon area-wide function restrictions rather a plot-based prescribed function would increase feasibility of conversion initiatives. Thirdly, the use of increased liability demands by project clients upon advisors as an unstructured tender criterion is mentioned as an undesirable restricting factor on advisor performance.

Recommendations

In order to aid actors involved with conversion initiatives in determining their appropriate role and position in office conversion projects, the following recommendations are put forward.

Table 1: Recommendations to consulted- and non-consulted actors (Own Table)

Real Estate Developers	Architects	Contractors
Allow the characteristics of the asset owner to inform the decision on project governance structure	Consider having a stronger focus on advisory role for 'look and feel'	Utilise profit margin advantage within large for scale conversion initiatives
Be realistic when determining risk- and profit margins	Be flexible in working for multiple (delegated) clients in one project	Supervise projects from content (BIM) rather than from process
Serve as an intermediary between asset owners in area redevelop-ment	Focus on design works up to final design (DO)	Focus on obtaining work outside of tenders
Be hesitant in using split tender strategy		
Municipalities	**Institutional Asset Owners**	**Real Estate Brokers/ Property Manager**
Improve alignment between spe-cial initiatives and permit depart-ments	Increase focus on keeping an asset within its portfolio	Combine brokerage activities with content based project manage-ment (in line with advice to con-tractor)
Review land-use plan procedure to increase flexibility	Initiate and support forward con-tract integration	Utilise existing knowledge advan-tage on Operation and Mainte-nance

Management Samenvatting

Leegstand van bestaande kantoorgebouwen is sinds het begin van de economisch crisis in 2008 een groeiend probleem voor eigenaren geworden. Een gevolg hiervan is dat marktpartijen en overheden zich in toenemende mate focussen op initiatieven voor het transformeren van leegstaande kantoren naar een hotel- of woonfunctie. In vergelijking met nieuwbouw van vergelijkbare schaal zijn transformatieprojecten volgens bestaande literatuur complexer van aard. Tevens wordt afwaardering op de boekwaarde van het pand door de eigenaar in de literatuur als harde eis gesteld om een transformatie financieel haalbaar te maken.

Een gevolg van de sterkere focus vanuit de markt op transformatie initiatieven is dat een breder scala aan partijen zichzelf geschikt acht om nieuwe rollen binnen transformaties naar zich toe te trekken. De projectorganisatie structuur voor transformaties is volgens de literatuur nog altijd het systeem gebaseerd op de aankoop van een leegstaand pand door een risicodragende projectontwikkelaar. Hier omheen zijn architecten, aannemers en adviseurs op zoek naar de voor hen meest geschikte projectrol. Het in kaart brengen van de benodigde projectenrollen en geschiktheid van actoren voor deze rollen zou binnen de literatuur van meerwaarde kunnen zijn. Binnen dit onderzoek wordt geschiktheid bepaald op basis van de karakteristieken van de betreffende actoren en de specifieke organisatietaken horende bij transformatieprojecten.

Doelstelling en Onderzoeksvraag

Binnen de bovenstaande situatie ontstaat de vraag welke partij geschikt is om welke projectrollen en risico's op zich te nemen en welke organisatiestructuren toepasbaar zijn voor transformatieprojecten. Op basis van dit vraagstuk is de volgende **doelstelling** van dit onderzoek geformuleerd.

In een veranderende markt voor herbestemming van leegstaande kantoren zijn partijen geneigd nieuwe projectrollen op zich te nemen. Dit biedt in dit onderzoek de mogelijkheid om te beoordelen of een specifieke project organisatie structuur toegespitst op Nederlandse transformatie projecten van meerwaarde zou zijn. Hierbinnen is van belang dat een eventuele nieuwe structuur de haalbaarheid van het betreffende project verhoogd ten opzichte van de traditionele organisatie structuur. Mijn onderzoeksdoel is om een aanvulling op de bestaande literatuur over projectorganisatie en projectrollen aan te vullen. Hiernaast streef ik ernaar om aanbevelingen over de optimalisatie van projectrollen en de invulling hiervan te geven.

Om de verscheidenheid aan projectrollen en organisatiestructuren binnen Nederlandse transformatie projecten te verkennen, is de volgende **onderzoeksvraag** opgesteld.

Welke project organisatiestructuren en hieruit volgende rolverdeling tussen partijen is toepasbaar binnen het kader van Nederlandse kantoor transformatieprojecten?

Onderzoeksmethode

De onderzoeksmethode bestaat uit twee gedeelten: een literatuurstudie en een empirisch onderzoek door middel van expert interviews. De literatuurstudie is opgedeeld in twee stappen. In de eerste stap is de probleemstelling geformuleerd door middel van een verkennend onderzoek binnen het onderwerp 'marktdynamiek voor transformaties'. De tweede fase van het literatuuronderzoek omvat een onderzoek naar bestaande opvattingen over projectrollen, actoren en organisatiestructuren voor kantoortransformaties.

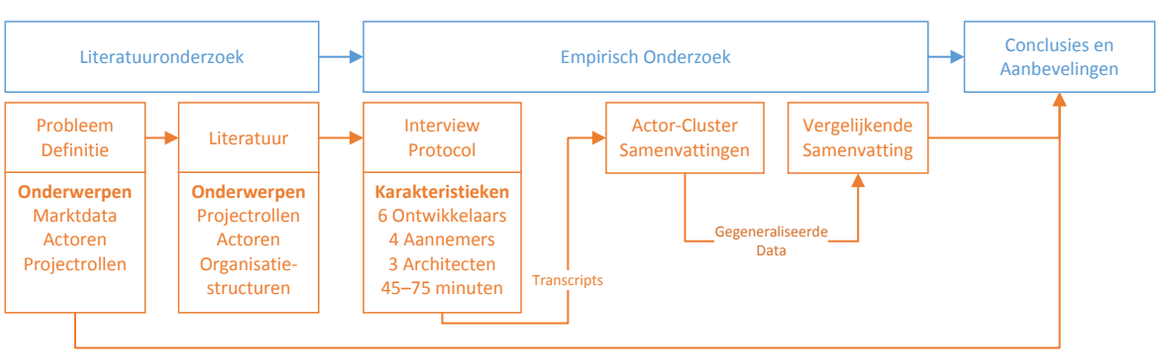

Figure 3: Overzicht onderzoeksmethode (Eigen illustratie)

Het empirisch onderzoek bestaat uit een serie van dertien expert interviews, hiervan waren zes interviews met vastgoedontwikkelaars, vier interviews met aannemers en drie interviews met architecten. Elk van de interviewkandidaten had aantoonbaar ervaring met herbestemming en kantoortransformaties. De interviewserie richtte zich op het verzamelen van de eigen ervaringen en waarnemingen van de interviewkandidaten op het gebied van projectrollen binnen kantoortransformaties.

Het proces om de opvattingen en ervaringen van de interviewkandidaten door te vertalen naar conclusies en aanbevelingen bestond uit drie tussenstappen. De eerste stap was het transcriberen van de audio opnames, hierna zijn de transcripten per vraag binnen de clusters met elkaar vergeleken en verwerkt tot drie gedetailleerde samenvattingen (één per actorgroep) op basis van directe quotes vanuit de interviews. De derde en laatste analysestap was het vergelijken van de drie samenvattingen en het opstellen één samenvatting.

Uitkomsten

De uitkomsten van het onderzoek zijn dat de literatuur en de praktijk met betrekking tot projectrollen en samenwerking binnen Nederlandse kantoortransformaties op een aantal punten duidelijk van elkaar verschillen.

1. Op basis van de empirisch data, de projectrol 'Ontwikkelaar' is op gesplitst in de rollen 'Risicodragende Ontwikkelaar' en 'Fee Ontwikkelaar'.
2. Het bestaan van de aparte project rol 'Initiator', welke in de bestaande literatuur regelmatig voorkomt, kon op basis van de empirische data niet bevestigd worden.
3. De bereidheid en het vermogen van de grotere Nederlandse aannemers om ontwikkelrisico naar zich toe te halen heeft eruit geleid dat op basis van het empirisch onderzoek de projectrol 'Ontwikkelende Bouwer' toegevoegd is, naast de bestaande rol 'Bouwer'.

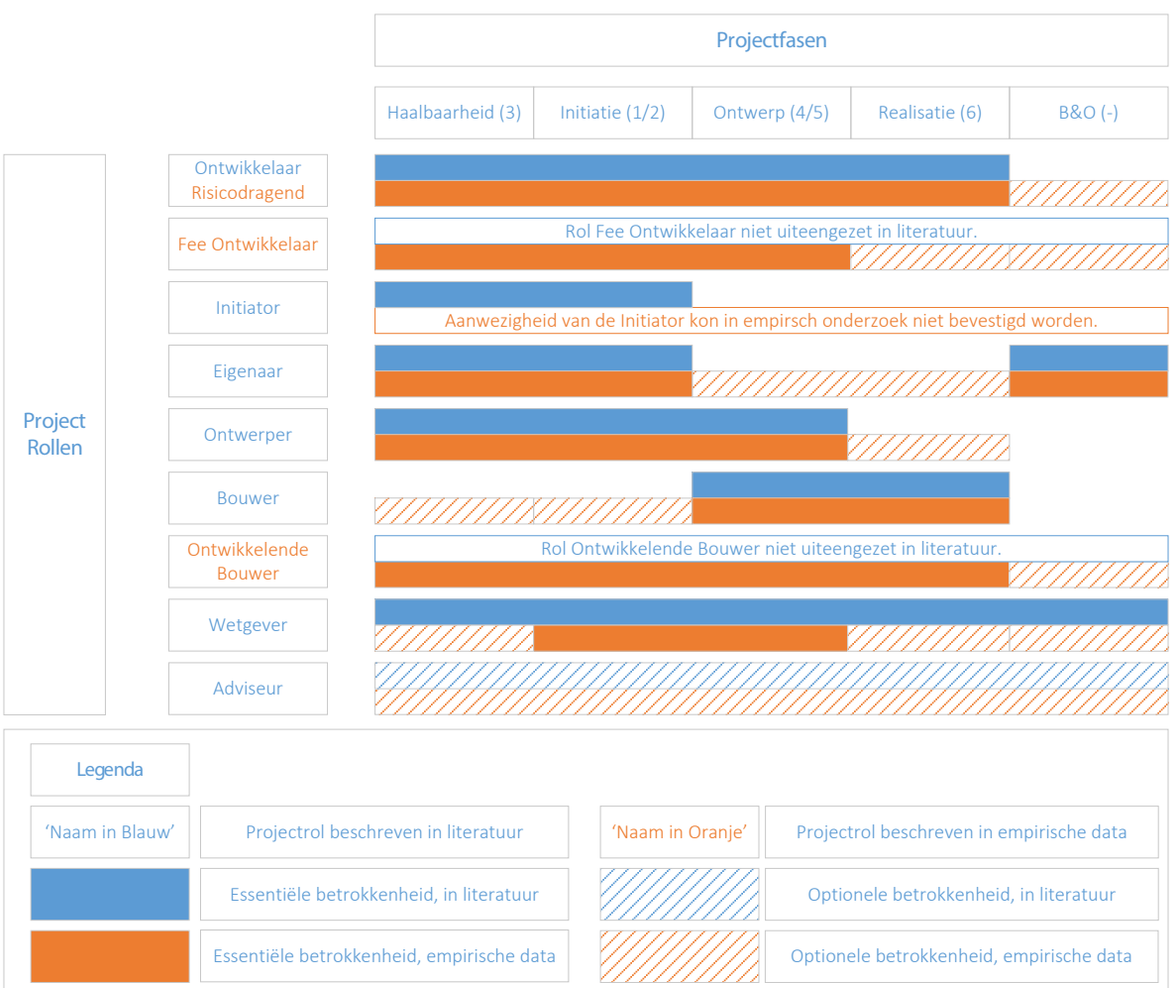

Figure 4: Vergelijking tussen project rollen in literatuur en in empirische data (Eigen illustratie, bevindingen vanuit literatuur gebaseerd op bronnen in figure 15)

Op basis van het empirische onderzoek is het volgende antwoord op de onderzoeksvraag geformuleerd.

De organisatie van een kantoortransformatie project kan uitgevoerd worden in de volgende structuren;

- ***Risicodragende Ontwikkelaar structuur;***
- ***Fee Ontwikkelaars structuur;***
- ***Ontwikkelende Bouwer structuur***

De structuur met een risicodragende ontwikkelaar wordt hoofdelijk gekenmerkt door tijdelijk eigenaarschap van een pand door een vastgoedontwikkelaar (opdrachtgever). Een fee ontwikkeling behelst het uitvoeren van projectmanagement werkzaamheden door een vastgoedontwikkelaar (gedelegeerd opdrachtgever) voor een onafgebroken eigenaar (opdrachtgever), hierin heeft de vastgoedontwikkelaar een gelimiteerde aansprakelijkheid jegens de eigenaar. De ontwikkelende bouwer structuur bestaat uit een hoofdaannemer (gedelegeerd opdrachtgever) welke het ontwikkelrisico overneemt van een onafgebroken eigenaar (opdrachtgever).

De belangrijkste drijvende krachten achter de keuze voor één van de structuren zijn als volgt.

- *Als een eigenaar het betreffende pand niet in portefeuille kan- of wil houden, is alleen de Risicodragende Ontwikkelaar structuur toepasbaar;*
- *Als een eigenaar het betreffende pand wel in portefeuille kan- en wil houden, zijn de Fee Ontwikkelaar structuur en de Ontwikkelende Bouwer structuur toepasbaar;*
- *Fiscaliteitsregels met betrekking tot het mogen dragen van ontwikkel- dan wel eigendomsrisico (onder andere toepasbaar voor pensioenfondsen) hebben een invloed op mate waarin de Fee Ontwikkelaar structuur en de Ontwikkelende Bouwer structuur toepasbaar zijn;*
- *Afname garantie heeft een sterke invloed op de betrokkenheid van vastgoedontwikkelaars en aannemers als risicodragers. Vastgoedontwikkelaar kunnen zowel met- als zonder afnamegarantie ontwikkelrisico dragen. Aannemers gaven gaan alleen risicodragend deelgenoot te willen worden bij aanwezigheid van afnamegarantie.*

Binnen de verdeling van projectrollen is de vastgoedontwikkelaar geschikt om zowel als fee ontwikkelaar of als gecombineerde risicodragende ontwikkelaar/tijdelijke eigenaar te fungeren. De aannemer kan de rol van traditionele (gelimiteerde aansprakelijkheid) bouwer op zich nemen, maar kan er tevens voor kiezen als risicodragende ontwikkelende bouwer op te treden. De visie op de rol van de architect binnen de bovengenoemde organisatiestructuren is dat deze louter in de rol van ontwerper op dient te treden en een uitbreiding van het takenpakket van de architect is niet gewenst.

Naast de uitkomsten welke pasten binnen het kader van de onderzoeksvraag, zijn in de loop van het onderzoek tevens een aantal onderwerpen en invloeden ter sprake gekomen waarmee vooraf geen rekening mee gehouden was. De eerste invloed betreft een recente groei (2014-2016) in de vraag naar kantoorruimte, wat volgens de respondenten het vraagstuk aangaande transformeren versus renoveren bemoeilijkt. Een tweede onvoorzien inzicht betreft de huidige bestemmingsplanprocedure. Respondenten gaven aan potentie te zien in een meer flexibel systeem, waarin op gebiedsniveau restricties aangegeven worden in plaats van het toewijzen van een specifieke functie op kavelniveau. Een dergelijk systeem wordt beschreven als een positieve invloed op de doorlooptijd en haalbaarheid van transformatie initiatieven.

Aanbevelingen

Om de onderzochte actoren te helpen bij het bepalen en invullen van de voor hen toepasbare rollen binnen transformatie initiatieven zijn de volgende aanbevelingen aangedragen. Waarbij onderscheid is gemaakt in geconsulteerde actoren (Vastgoedontwikkelaar, Architect, Aannemer) en niet-geconsulteerde actoren

Table 2: Aanbevelingen aan geconsulteerde- en niet-geconsulteerde actoren (Eigen Tabel)

Vastgoedontwikkelaars	Architecten	Aannemers
Gebruik de eigenschappen van de eigenaar als startpunt voor de beslissing voor een specifieke projectorganisatie structuur	Overweeg het innemen van een meer consulterende rol voor 'look and feel'	Maak gebruik van het aannemers-voordeel met betrekking tot winst- en risicomarges voor grootschalige transformatie initiatieven
Wees realistisch bij het bepalen van winst- en risicomarges	Wees flexibel in het werken voor meerdere (gedelegeerde) opdrachtgevers binnen één project	Voer projectmanagement uit vanuit inhoud (BIM) en niet vanuit het louter vanuit het proces
Fungeer als verbindende actor tussen vastgoedeigenaren binnen gebiedsontwikkelingen	Focus op ontwerpwerkzaamheden tot aan het definitief ontwerp (DO)	Richt je op het verkrijgen van werk buiten tenders in één-op-één relaties met eigenaren
Wees terughoudend in het toepassen van gesplitste tender in de realisatiefase		
Gemeenten	**Institutionele Vastgoedeigenaren**	**Makelaars/ Vastgoedmanagers**
Focus op het verbeteren van de communicatie tussen transformatieloodsen en vergunningsafdelingen	Verhoog focus op het in portefeuille houden van het leegstaande pand tijdens transformatie	Combineer makelaarsactiviteiten met projectmanagement vanuit inhoud (in lijn met advies aan aannemer)
Heroverweeg bestemmingsplanprocedures met als doel het verhogen van flexibiliteit	Initieer en ondersteun voorwaartse contractintegratie	Maak gebruik van aanwezige kennis met betrekking tot Beheer en Onderhoud

Reading Guide

Reading this report requires two documents. The first one being this report. The second being the appendix cluster. Depending on the version of the report you have received (public/restricted access), certain elements are omitted from the appendix cluster of the public version. Appendices are numbered in accordance with the corresponding section of the main report. For instance, appendix C3 is the third appendix pertaining to section C in the main report. A complete overview of all appendices is listed on page 89.

When carrying out the empirical research, several interviewees requested not to be mentioned by name and company in the main report. In order to treat each interviewee similarly, none are mentioned by name. The identities of the interviewees are known to the graduation committee.

The main report consists of four sections. **Section A** contains the research framework used to carry out this research. **Chapter 1** is the narrative literature study which culminates into the problem statement, **chapter 2** consists of the key characteristics such as the main research question and the scope.

Section B provides the in-depth literature review of four topics; the office conversion process **(chapter 3)**, project roles in office conversions **(chapter 4)**, project actors in office conversions (chapter 5) and project governance in office conversions **(chapter 6)**. The conclusions based upon the literature study are displayed in **chapter 7**.

Section C contains a description of the empirical research and its outcome. **Chapter 8** outlines the research method used to carry out the empirical research and **chapter 9** contains the outcome. The contents concerning section C in the main report are purposely kept brief and limited to the outcome. All background material related to section C can be found in appendices C1 through C6.

Section D consists of the final product. The contents of **chapter 10** provides an overview of the differences and similarities between the literature findings and the empirically gathered data. **Chapter 11** contains the combined conclusions of the literature- and empirical research. In **chapter 12**, some of the conclusions are subjected to additional reasoning by the author in an informed effort to explain the root causes for certain observations. **Chapter 13** contains the recommendations to both consulted as well as non-consulted project actors. In **chapter 14**, the outcome of the research is discussed in terms applicability and limitations. Possibilities for further research are also presented in this final chapter.

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Section A: Research Framework

Research Trigger

In order to formulate a main research question, a narrative literature study has been carried out concerning the current state of the Dutch office market and the Dutch office conversion market in particular. This introductory literature study has been used to set the scene and confirm that investing time and effort into this research has potential to fill a knowledge gap. For drafting the research framework, the method as described by Verschuren and Doorewaard (2010) is utilised.

The initial trigger for studying the playing field of roles and actors in office conversion came about when discussing possibilities for research into office conversions with representatives of DTZ Zadelhoff (2015a). The discussions lead to the traditional scheme displayed in figure 5, which was used to outline the exploratory literature study.

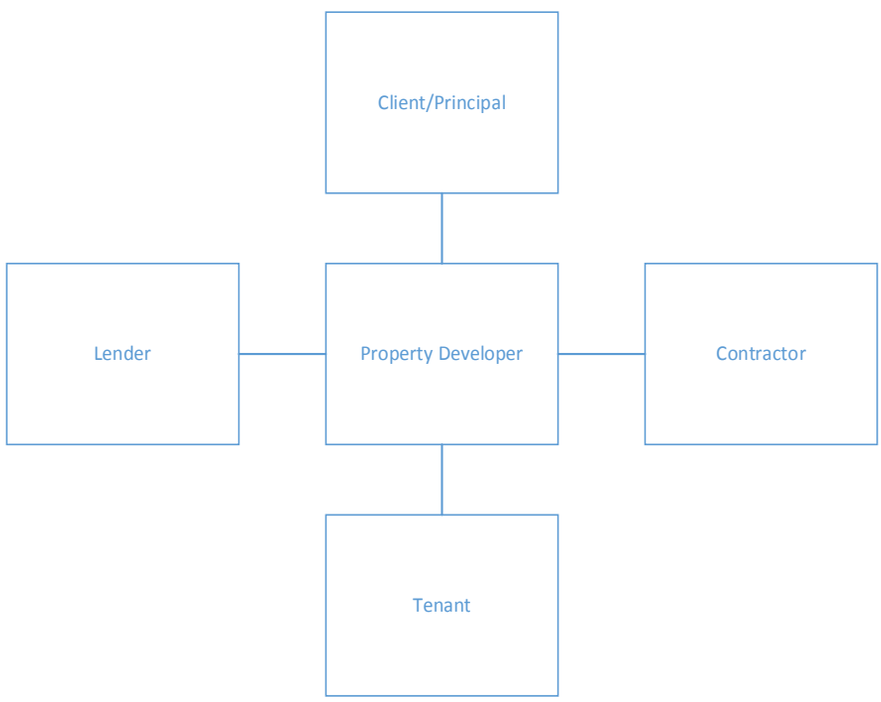

Figure 5: Traditional Realisation Model Office Conversion

(Own Illustration, created using DTZ Zadelhoff (2015a))

The structure used to govern collaboration between actors used in office conversion projects up until 2008 hinged around a risk bearing real estate developer which would either carry the project in a risk-bearing role or (for larger projects) be partly dependant on the financial means put forward by a lender (Kastes Development, 2012; Mackaaij, 2015; Mandigers, 2014).

To be able to assess whether research into roles and actors in office conversions is required and which form said research should take place, the following topics will be researched in a narrative literature study.

1. The current state of the Dutch office space market
2. The current state of the Dutch conversion market
   Exploration of project roles within conversion initiatives
3. An exploration of the actors involved in conversion initiatives

1 Problem Demarcation

The first segment of this research is aimed at carrying out the necessary steps in order to formulate a problem statement as well as a corresponding main research question. This chapter contains the narrative literature study carried out in order to formulate the problem statement of this research.

1.1 Market Data Office Conversion Projects 2008 – 2014

1.1.1 Dutch Office Space Market (Supply Side)

The possible realm of the research can be broken down into several main elements. First and foremost, there appears to be an increasing imbalance between the quantity of office space being offered through the Dutch real estate market and the corresponding quantity of commercial office space being demanded by the market. This observation is supported in literature. In 2009, a total of 13.5% of all commercial office space in the Netherlands was vacant (Remøy, 2010b). In 2011, vacancy had increased to 13.9% (DTZ Zadelhoff, 2011) and onwards to a total of 16.0% in the year 2014 (DTZ Zadelhoff, 2016). These percentages were drawn up using the following definition of vacant office space.

> "Vacant office space refers to the office which is offered to the market in completed and handed over real estate assets not in active use at the moment of data gathering."
>
> (DTZ Zadelhoff, 2016, Translated from Dutch)

One of the more important causes for the high level of vacancy in the Dutch commercial office market is that a large amount of office development was speculatively created before the year 2001. During this timeframe, interest levels for bank loans were low and speculative office developments increased possibilities for a higher return of investment (ROI) (Keeris, 2007). The trend of overproduction can be observed in figure 6, with a significant spike in the handover of new built office space in the Dutch city of Utrecht between 1996 and 2001.

A consequence of the overproduction in the timeframe 1996 until 2011 is a reduction in commercial activity from real estate developers (Rooijers, 2015). According to Van Elp, De Kok, Saitua Nistal, and Zuidema (2011, p. 26) using data by R. L. Bak (2011), a declining trend can be observed when assessing the amount of deliveries of new office buildings. This is displayed in figure 6 and indicates that the observation concerning the activity of real estate developers could be valid. A side note which has to be added is that the report by only contains data about the city of Utrecht.

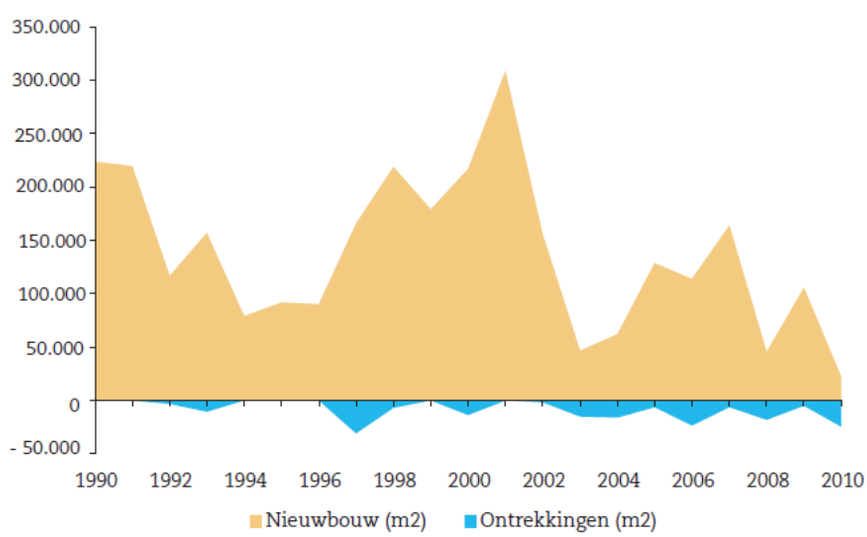

Figure 6: Added (Nieuwbouw) and Absorption (Onttrekkingen) of Office Space - Square Metres - 1990-2010 (Published in Van Elp et al. (2011) using data provided by R. L. Bak (2011))

In order to confirm whether or not the data presented above for the city of Utrecht can also be applied for the Netherlands as a whole, two larger datasets have been compared.

Table 3: Sources and Variables Market Data Office Conversion 2008 – 2015 (Sets 1a and 1b) and 2000 – 2015 (Set 2)

	1	2
Research published by	DTZ Zadelhoff	Dynamis
Name Report Series	Factsheet Kantorenmarkt	Sprekende Cijfers
Years of publication	2008 through 2015 (Separate publication each year)	2008 through 2015 (Separate publication each year)
Explicit Variables	Withdrawals [m^2] Availability [m^2] Office Stock [m^2] Office Vacancy [%]	Withdrawals [m^2] Availability [m^2] Office Stock [m^2] Office Market Rate [%}
Implicit Variables	Office Market Rate [%}	Office Vacancy [%]

The implicit variables have been calculated manually using equation 1 and equation 2 due to the variables not being present in the original report.

Equation 1: Office Market Rate (Dynamis, 2016)

$$Office\_Market\_Rate[\%] = \left(\frac{Withdrawals\left[m^2\right]}{Availability\left[m^2\right]}\right) * 100$$

Equation 2: Office Vacancy (DTZ Zadelhoff, 2016)

$$Office\_Vacancy[\%] = \frac{Availability\left[m^2\right]}{Office\_Stock\left[m^2\right]} * 100$$

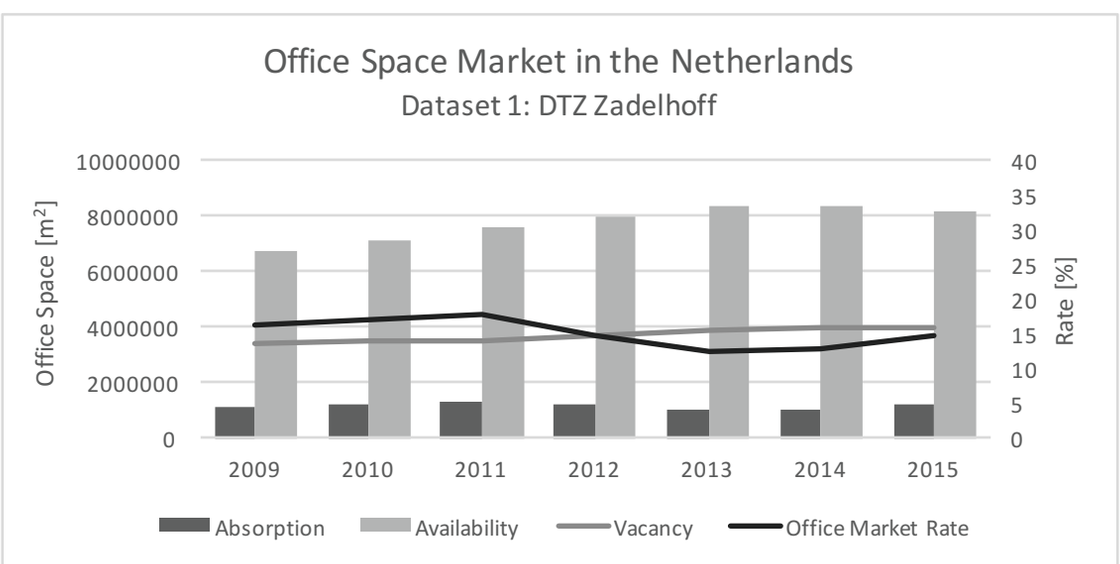

Figure 7: Absorption (excluding Demolition and New Built for a Combined Owner/User) and Availability of Commercial Office Space (2009 – 2014). Data and graph by (DTZ Zadelhoff, 2011, 2012, 2013, 2014, 2015b)

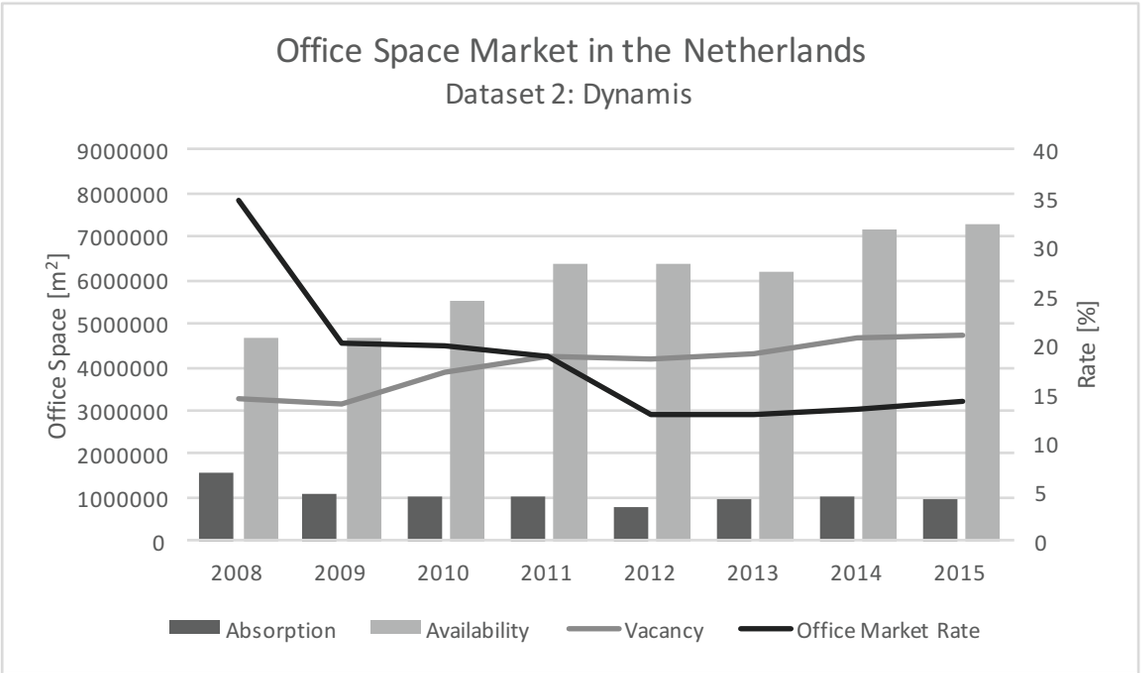

Figure 8: Absorption (excluding Demolition and New Built for a Combined Owner/User) and Availability of Commercial Office Space (2009 – 2014). Data and graph by (Dynamis, 2016)

The outcome of datasets 1 and 2 is supported by research carried out by Klaver and Van Enk (2015) for the trade magazine PropertyNL in a study on the supply and demand of office space in the Netherlands. It is concluded that the decline in real estate development is mainly caused by banks stepping down from their role as financing party (i.e. lender) in real estate development. With investors being in control to "green light" a project due to financing power, the return on investment for real estate developers is reduced. To combat this loss on ROI, developers can chose to continue operations as a risk bearing market party, while aiming to reduce the risk level related to specific projects. This would require the project developer to either rely on funding from the owner of the asset or procure funding from alternative sources (Klaver & Boiten, 2014; Mackaaij, 2015). Another possibility is that the developer takes a role as a fee-developer for the design and engineering work, in which the developer bears a financial liability which is limited to the financial weight of the work carried out (Chao-Duivis, Koning, & Ubink, 2013). They do not own project plans and are simply involved in a service supplying role. If a fee structure is implemented, the administrative conditions DNR2011 for consultancy work are suitable to govern conversions projects (Various Authors, 2013).

Whenever there is a perceived market gap, a possibility for market parties could emerge on the supply side of the market (office space). In the current development and redevelopment market, there is a need for additional risk bearing actors as well as a suitable development product for (re)development (Battes, 2015; Klaver & Boiten, 2014; Klaver & Van Enk, 2015). As for the demand side of the market, according to Geraedts and Van der Voordt (2005) as well as Soeter, De Jong, and Van de Water (2011), the main possibilities for conversion of structurally vacant commercial real estate lie in the creation of housing. Hek, Kamstra, and Geraedts (2004) outline through an overview of the characteristics of structurally vacant commercial real estate, that the following external characteristics are beneficial to the viability of office conversion projects. The most important criterion is perceived to be adjacency to either main transportation networks (motorway or mainline public transport), with proximity to a city centre being a close second. When combining these characteristics with the publication by Schalekamp, Remøy, and Hobma (2009) and data by DTZ Zadelhoff (2011) and DTZ Zadelhoff (2016), it provides insight into the technical requirements for a financially viable conversion initiative. The data by DTZ Zadelhoff and the visualisations in figure 7 and figure 8 also provides information on the (in)balance between supply and demand on the market for commercial office space in the Netherlands.

The most recent market observation as per January 2016 is that the overall percentage of vacancy in commercial office space in the Netherlands is decreasing. This does however not solely stem from an increase in office conversions, but is mainly due to several large transactions for commercial real estate in the transhipment sector rather than a market wide reduction in vacancy (DTZ Zadelhoff, 2015b, 2015d). The imbalance outlined above provides partial confirmation for the necessity for further research into the refurbishment and conversion of existing commercial real estate.

1.1.2 Dutch Office Conversion Market

General Market Conditions

Datasets 1 and 2 display the absorption of commercial office space from the market; absorption is a combination of vacant assets being rented by a new tenant without refurbishment/conversion and assets being occupied after refurbishment/conversion, without taking into account the assets which are demolished and replaced. The relatively constant level of absorption is supported by data from R. L. Bak (2015). This dataset indicates that there seems to be no clear increase in the amount of square metres of structurally vacant office space being converted. When looking back at the timespan 1990 – 2007, the level of conversion projects carried out has been relatively stable in terms of output (Mackay, Remøy, & De Jong, 2009). According to CBS Statline (2015), in the timespan 2012 – 2014, the absorption level of office space actually seems to be decreasing. (important: CBS Statline (2015) measured in amount of assets, not in square metres lettable floor space. As a results, the data is not directly comparable to DTZ Zadelhoff (2016). Since the data by CBS does not differentiate between types of withdrawal besides "Demolition" and "Other Withdrawals", no definite conclusions can be drawn.

It is however an interesting insight for further research for this graduation thesis, especially since the relatively small scale of office conversion in the Netherlands seemingly contradicts with the notion as published by PropertyNL using data provided by Dynamis (2016); (Unknown, 2015a) that the amount of square metres commercial real estate transformed in 2015 reached an all-time high at 720.000 m^2. This would make conversion the highest contributor to absorption of vacant office space in 2015. With the total amount of absorption of vacant commercial real estate decreasing from 1.13 million m^2 to 1.08 million m^2, the relative importance of conversion for future research is emphasised. This is further emphasised when noting that the total amount of office space which was converted in the timespan 2010 – 2015 amounts to 2.2 million square metres (Dynamis, 2016). The reduction of the total amount of office space in 2015 does not mean the start of a trend, but it is however a possible interesting trigger for research into the matter.

Types of Conversion

With this research focussing on the roles and actors involved in the redevelopment of office space, it is vital to present data on which type of action is taken by which actor. The dataset collected by R. Bak, De Geus, Hartman, and Rindertsma (2016) for NVM Business goes one level deeper into conversion of commercial office space than datasets 1 and 2. The before mentioned datasets aim to outline the overall office stock in the Netherlands, the data by R. Bak et al. (2016) displays what actions have been taken when a vacant office is being redeveloped.

The following characteristics are applicable for each of the figures related to dataset 2.

1. Data corresponds to the timespan 2000 – 2015.
2. All assets within the dataset have the original function office space.
3. Data only takes into account projects for which a decision to alter (either to demolish or to convert) is already taken. Project which are mothballed are not taken into account.
4. The original data set consisted of percentage values, any conclusions drawn are indications based upon percentage and conclusions based upon numerical data.

Figure 9 contains an overview of the type of action which is taken when the decision is made to redevelop the current state of an office building. The total ratio between demolition and conversion (43% to 57%) comes down that for each 3 office buildings which are demolished, 4 office buildings are converted. It is important to denote that this dataset does not differentiate per year, but only presents data for the entire timespan 2000 – 2015.

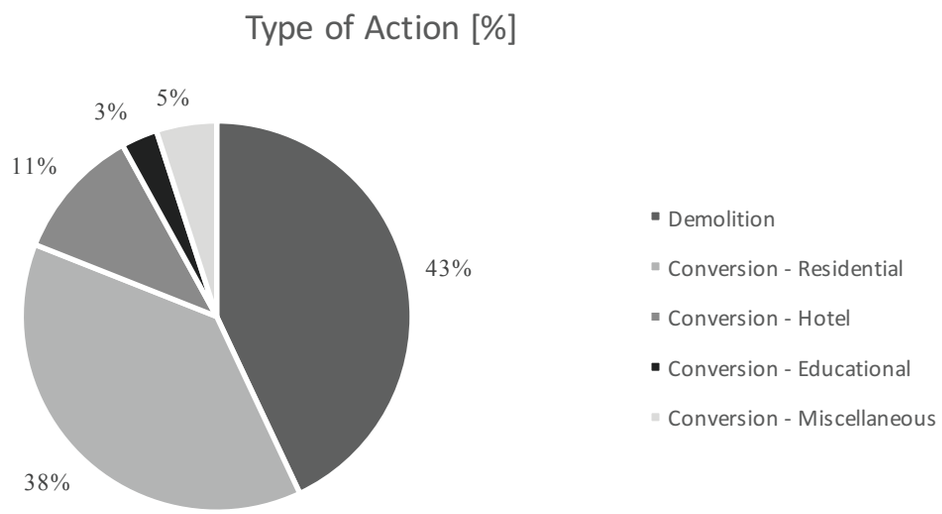

Figure 9: Distinction Type of Action for Vacant Dutch Office Space for the Timespan 2000 – 2015 (R. Bak et al., 2016)

When breaking down the dataset for the different types of conversion, the data by R. Bak et al. (2016) supports the relative importance of conversion of vacant office space into a residential function, but also adds that for a large percentage of vacant office building, demolition is still the most viable course of action. To get a grip on whether or not the type of owner involved has an influence on the type of action, Bak also made a distinction between whether a vacant office is owned and used by different actors (middle column) or if the office is owned and used by the same actor (right column).

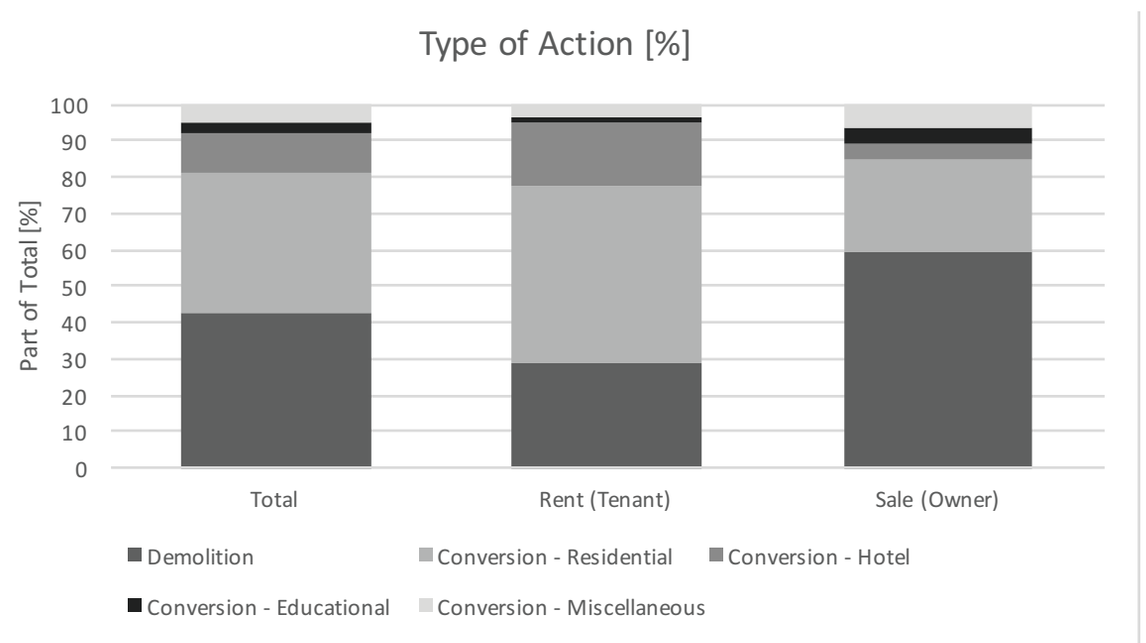

Figure 10: Comparison towards Total (figure 9) of Type of Action for Vacant Dutch Office Space for Split Owner/User in the Timespan 2000 - 2015 (R. Bak et al., 2016)

The outmost left column of the graph in figure 10 is a different representation of the pie chart in figure 9. A comparison of the total against the user type "Rent (Tenant)" gives indication that the differentiation between types of conversion is similar to the overall market situation for asset adaptation between 2000 and 2015. As for the comparison between the columns "Total" and "Sale (Owner)"; there appear to be larger differences (in terms of percentages) with the percentage of demolition being higher for "Sale (Owner)" projects. When comparing the columns "Rent (Tenant)" and "Sale (Owner)", the most easily observable notion is the difference between the percentage of assets which is demolished and the accumulated percentage of all conversion options. No systematic conclusions can be drawn from these figures alone, but it does support the notion that within a governance model tailored towards office conversion projects should contain a split for the type of project client between; 1. An asset with a split Owner/User ("Rent (Tenant)") and 2. An asset with a combined Owner/User ("Sale (Owner)").

1.2 Exploratory Actor Scan Office Conversion Projects

The traditional realisation model in figure 5 provided an introductory overview of the actors involved in a real estate conversion project. In order to gain a complete picture of the involved actors, an exploratory actor scan was carried out. The main body of literature used is Van der Voordt and Geraedts (2007). Any further literature sources are mentioned when applicable. The exploratory actor scan yielded an overview of the main actors involved in a real estate conversion initiative. To assess importance of actors, Bryson (2004), Eden and Ackermann (1998) are used to describe power and interest. Enserink, Hermans, Thissen, Koppenjan, and Bots (2010) is used to describe criticality and relevant resources has been used.

Table 4: Actor Scan - Overview Actors in Current Collaboration (References mentioned in table)

Actor	Role	Power	Interest	Criticality (Hek et al., 2004)	Relevant Resources (Hek et al., 2004; Van der Voordt & Geraedts, 2007)
Real Estate Advisor (DTZ Zadelhoff, 2015c; Hek et al., 2004)	Private	Medium	Medium	No	Knowledge of real estate market and conversion of commercial real estate
Real Estate Developer (Hek et al., 2004)	Private	High	Medium	Yes	Knowledge of real estate market and conversion of commercial real estate
Real Estate Broker (Hek et al., 2004)	Private	Medium	Medium	Yes	Knowledge of multiple segments of real estate market
Regulatory Body (Hek et al., 2004; Van der Voordt & Geraedts, 2007)	Public	Very High	Medium	Yes	Law-making capability Blocking power Land ownership
Client/Principal (Owner) (Hek et al., 2004)	Public/Private	Medium	High	Yes	Demands, wishes and requirements Financial Means (Optional)
Architect (Hek et al., 2004)	Private	Medium	Low	No	Design knowledge
Contractor (Van der Voordt & Geraedts, 2007)	Private	Medium	Medium	Yes	Knowledge on realisation Equipment and building materials Financial means
Tenant (Hek et al., 2004)	Private	Low	Very High	No	-
Maintenance Provider (Van der Voordt & Geraedts, 2007)	Private	Low	Low	No	Experience with long term commitment Equipment
External Lender (Hek et al., 2004; Mackaaij, 2015)	Private	High	Low	Dependant on project governance structure	Financial means (Related to Client/Principal)
Operator	Private	Medium	High	No	-

Table 4 is transformed into a power interest grid in figure 11, the aim of the grid is to provide an overview of the actors which are to be taken into account when carrying out a literature study. The quadrants of the power interest grid display the position of the actor under the traditional realisation model (figure 5) for office conversions. The client/principal and the real estate developers are the most important actors, without these two roles a project cannot be carried out. In terms of importance, these actors are followed by the critical context setters such the regulatory bodies. The subject- and crowd actors are deemed to be of lesser importance, but can exert influence on the outcome of the project (Bryson, 2004).

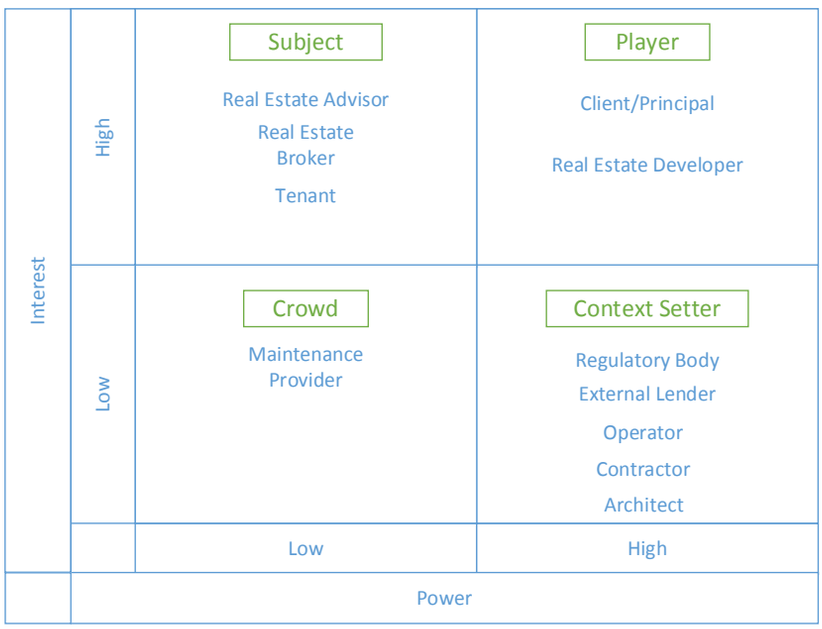

Figure 11: Power versus Interest Grid Exploratory Actor Scan (Own Illustration)

(Bryson, 2004; Hek et al., 2004; Mackaaij, 2015; Van der Voordt & Geraedts, 2007)

1.3 Exploratory Role Scan Office Conversions Projects

Whereas the amount of research carried out into the actors which are tied to Dutch office conversion projects is extensive (Dreimuller, Gruis, & Snoeijs, 2013; Hek et al., 2004; Heurkens, 2009, 2012; Van der Voordt & Geraedts, 2007), the existing knowledge on project roles in office conversion is limited. On the topic of project roles in area redevelopment, some research into project roles has been carried out as a side-topic by Putman (2010) in the context of a graduation thesis Master City Developer at Erasmus University Rotterdam.

The research by Putman (2010) reasoned from actor towards role in the context of area development. This resulted in an outcome wherein the relationship of actors to the project developer is assessed for projects which incorporate both soil- as well as asset works. The advice concerning the project roles in question was limited to advising potential area developers on which responsibilities to take up based upon data and experiences from the timespan up until the year 2008. A consequence of the chosen timeframe by the author resulted in the recovery phase after the economic downturn of 2008 and 2008 has been extrapolated and the effects of this timespan not being supported by data research. Within the realm of conversion of abandoned inner city industrial halls, Schönau and De Bruijne (2008) elaborated upon the model (Driefasenmodel) developed through De Kopgroep (2007). The three main roles which are defined by Schönau and De Bruijne (2008) are the "host" (gastheer), the "concept developer" (conceptontwikkelaar) and the "market manager" (marktmeester). Even though this concept is not tailored towards office conversions and its specific actor field, it does provide a foundation on which to start developing a similar line of reasoning for office conversion initiatives.

A specific research into the distinctive project roles for conversions of commercial office space has to my knowledge (after researching databases) not been carried out. There has however been research into adjacent topics, which can serve as a starting point to set the framework on roles in Dutch conversion projects.

1.4 Outcome Narrative Literature Study

The topics discussed in the narrative literature study have resulted in the following elements which are of use for research when aiming to increase the knowledge on office conversion initiatives in the Netherlands.

Elements Related to the Dutch Real Estate Market

1. Since the year 2008, there has been a decrease in the commercial activity of real estate developers in comparison to the level of commercial activity prior to the economic downturn in 2008. The major driving force for this reduction in the risk bearing presence of real estate developer is due to banks dropping out as lenders. (Rooijers, 2015)
2. In the timeframe between 2000 and 2014, an increase in the level of vacancy of commercial real estate has been noticeable. The vacancy has topped out at 16% of the gross lettable area (GLA) in office space in the year 2014. (DTZ Zadelhoff, 2011, 2016; Remøy, 2010a)
3. There has been an increase in the quantity of conversion initiatives over past 5 to 10 years, with an upswing (increase which is significantly larger than the trend) in the year 2015. However, overall market share of conversions in relation to the sum of all withdrawals of commercial office space from the market remains limited. (R. L. Bak, 2015; Dekker, 2006; Dynamis, 2016; Remøy, 2007; Unknown, 2015b)
4. The current real estate market situation is that of a shift from a creation market towards a replacement market, this results in an increase in obsolete commercial real estate assets (Gelinck, 2007; Mackay et al., 2009; Remøy, 2007)

Elements Related to Office Conversion Projects

1. In order to increase the financial feasibility of an office conversion project, a reduction in book- and/or market value of assets is currently required to initiate an office conversion project. (Douglas, 2006)
2. There is a lack of knowledge between actors concerning the different segments of the real estate market. Since conversions by definition involves activity more than segment of the real estate market (due to change in function of the asset), this issue is more prevalent for conversion projects. (Douglas, 2006)
3. There appears to be a level of willingness from lenders to invest in real estate projects, but due the real estate developers not being present within the market to offer a suitable product, a limited amount of investment is taking place. (Klaver & Boiten, 2014; Klaver & Van Enk, 2015)
4. Due to the importance of financial feasibility related to an office conversion project, asset owners and lenders are in control to "green light" a project due to financing power (Douglas, 2006, pp. 48-52; Mackaaij, 2015). The actor carrying out the project development role has to choose to either become risk bearing or work as a fee-developer at the other far end of the risk spectrum. (Klaver & Boiten, 2014)
5. Market parties other than real estate developers are increasing their role as lender for office conversions; these actors can lack knowledge concerning wishes of the tenant as well as the investor. (Klaver & Van Enk, 2015)

Elements Related to Actors, Roles and Collaboration

1. The client/principal and the real estate developer appear to be the most important actors in the current project governance arrangement. (Hek et al., 2004; Mackaaij, 2015; Van der Voordt & Geraedts, 2007)
2. A clear definition of the distinctive roles for office conversions, is currently not present. There is a framework in place on which to start creating new knowledge (Schönau & De Bruijne, 2008).
3. Current forms of collaboration appear to provide limited possibilities for integration of activities and a shift in risk-bearing roles. (DTZ Zadelhoff, 2015a)
4. The current construction contracts available are not tailored for conversion projects and in their current form do not cater for in shift in risk-bearing actor. This can result in office conversion projects not being carried out due to the effects of risk, liability and its effect on the financial feasibility of the project. (DTZ Zadelhoff, 2015a; Various Authors, 2013)

1.5 Problem Statement

From the elements described, a continuous line of concerning on the current situation in the Dutch conversion market can be deduced. The problem statement focusses on the notion of potential changes of roles and actors in office conversion project.

Since the year 2000, the Dutch commercial real estate market has been out of balance in terms of the supply being larger than the demand. This imbalance has resulted in an increase in the vacancy level of office space. The increase in the level of office space vacancy above the friction vacancy required for movement on the market, twinned with a demand from the market for creating living space, is in turn a driver for office conversion. This has led to a situation in which the division of project roles played by actors has been altered. The most noticeable being that traditional real estate developers currently have a reduced ability to bear financial project risk in conversion initiatives in comparison to the manner they did before the start of the economic crisis in 2008. With actors having to take up altered project roles as a result of changes in project finance sources, a knowledge gap is created concerning suitability of actors to project roles.

2 Research Outline

Moving forward from the problem statement in paragraph 1.5, this chapter contains the main characteristics of the research methodology used to carry out the literature- and empirical research.

2.1 Subject

Using the problem statement as a backdrop, the following research subject has been drawn up using the technique of stepwise refinement (Schoenmaker, 2015). An overview of the stepwise refinement process can be found in Appendix A1: Stepwise Refinement of Subject.

Governance of roles within a project structure for Dutch office conversion projects.

2.2 Research Objective

In order to address the situation described in the problem statement, the following research objective has been drawn up.

With different types of parties taking up distinctive roles and risks in a project setting, an opportunity arises for assessing the possibilities for a project arrangement and role division tailored to the current Dutch office conversion market. This type of project arrangement should have an increased fitness for purpose over the current project structure. I will aim to expand the existing knowledge on the project governance structures in relation to the distinctive roles which have to be filled in Dutch office conversion projects. The goal is to formulate recommendations aimed at the manner in which governance of project roles may be optimised.

2.3 Main Research Question

Translating the problem statement and research objective into the main research question displayed the need for the following elements to be included in the main research question.

1. Top down view from governance tasks in conversion projects towards roles and allocation.
2. Emphasis on the playing field of involved actors within office conversion projects.
3. Indication of line of reasoning from roles towards actors.

Combining these elements with the problem definition, the following main research question shall serve as the basis for the literature- as well as for the empirical research.

Which project governance structures and subsequent division of project roles among actors is suited for Dutch office conversion projects?

2.4 Sub Questions

There are multiple angles from which the main research question can be approached. Within this research, the chosen angle is to initially focus on describing the distinctive project roles which have to be filled during an office conversion project. Subsequently, the aim to extend the line of reasoning towards the possible actors which are able to fill the distinctive roles. By pursuing this direction rather than to reason from actors towards roles, the characteristics of the project form the central pivot rather than the characteristics (i.e. the business model) of the actors. This should improve the manner in which the outcome is tailored around office conversion.

Table 5: Sub Questions (Own table)

#	Question	Research Method	Initial Sub Topics	Explanation
1	Which activities and corresponding roles have to be carried out in an office conversion project?	Literature Study	Characteristics of office conversion projects	Updated version of study on office conversion roles since the year 2008.
2	Which project governance structures and risk-/liability allocation are in common use for office conversion projects since 2008?	Literature Study Expert Interviews	Forms of collaboration Project risk	Work from role to actor rather than from actor to role. This should hinge around project characteristics rather than actor characteristics.
3	What is the performance record of the types of market parties which have participated in Dutch conversion projects in a risk-bearing role since 2008?	Expert Interviews	Financial feasibility	Exploration of the perceived success of office conversion projects and the driving forces behind success and failure.
4	Which project role based factors have an impact on the feasibility of Dutch office conversion projects?	Literature Study Expert Interviews	Financial feasibility Characteristics of office conversion projects	Overview of restrictive governance tasks related to office conversion projects.
5	Which alterations to the common actor-role pairing in office conversion are likely to be of benefit to upcoming office conversion projects?	Expert Interviews	-	Validation of actions of actions proposed after sub questions 1 through 4.

2.5 Scope

Table 6 provides an overview of the research scope. The main source of input for the scope is the research objective, which should be able to be fulfilled within the set scope.

The elements related to the types of project which are to be taken into are formulated in such a manner to include relevant Dutch conversion projects in which the original use was office space. This will strengthen the fitness of purpose in filling an existing knowledge gap

The decision to focus on projects and data from the timespan 2008 – 2014 was made to align the research with previous material and to incorporate the effects of the aftermath of the financial downturn (2007/2008) into the research.

Not specifically focussing on either (Dutch) public- or private pre-conversion asset owners should allow for the possibility of a comparison between these two types of actor if a clear distinction between the projects' performances related to the type of client is observed.

Table 6: Demarcation of Research Scope (Own table)

Element	Inside Scope	Outside Scope
Meta Scale	Conversion of individual assets, Links with area conversion related to project governance (Full Intra-Project; Limited Inter-Project)	Links with area conversion not related to project governance (Full Inter-Project)
Location	Assets within the Netherlands; Buildings	Assets outside of the Netherlands, Public space; Infrastructure
Asset Type	Real estate originally constructed as commercial office space	Real estate originally constructed as living space (house, dwelling), commercial retail space or any other non-office function
Type of work	Conversion of office space with a change of function	Refurbishment of office space without change of function
Timespan of projects	Projects completed between 2008 and 2014	Projects completed in the year 2007 or earlier;
Pre-Conversion Asset Owner	Governmental bodies within the Netherlands (National, Regional, Local); Private firms (Institutional investor, Pension fund)	Governmental bodies outside of the Netherlands
Project Phase	**Main focus** Engineering/Design, Realisation **Sub focus** Acknowledge links with Operation and Maintenance	Actual content of Operation and Maintenance

2.6 Methodology

The research displayed in this report is divided into three phases. The first phase encompasses the narrative literature study with the aim of setting the research framework and making a start with the subsequent in depth literature study. The data gathering in phase II shall consist of a literature study to describe the scale and scope of existing scientific knowledge. Phase III will be an empirical research into project performance of conversion projects completed in the Netherland since 2008.

Table 7: Research Method (Own Table)

#	Name	Objective(s)	Questions	Research Method(s)	Product(s)
I	Exploration and Preparation	Defining the objectives and research questions	-	Literature Study Exploratory Talks	Problem Demarcation; Research Outline; Research Method
II	Literature Study	Map the roles and actors required for carrying out an office conversion project Map the requirements for feasibility related to roles and actors.	1; 2; 4	Literature Study	Description of project structure, roles and actors in office conversion Assessment of project performance since 2008 New and/or altered hypotheses
III	Empirical Research	Assessing the outcome of phase II against the experiences of representatives from real estate developers, contractors and architects	1; 2;3;4;5; Main Research Question	Expert Interviews (Semi structured)	New and/or altered hypotheses Conclusions and recommendations Deliverables

2.7 Deliverables

In relation to the main research question and sub questions, the following deliverables will be created.

Overview of Roles and Actors in Office Conversions

A comparison between the views on actors and roles involved in office conversion projects which are currently present in literature with the views obtained through empirical research. The views will be combined into a role involvement diagram across project phases.

Recommendations for Actors

From the overview of roles and suitable actors, it should be possible to provide actors with recommendations on how position themselves when deciding upon which conversion projects to partake in. Recommendations should revolve around finding the right actor to bear development- and/or marketing risk, rather than altering the project in such a manner to make it suitable for a specific type of actor.

The main recommendations will be aimed at the types of actor which are consulted during the empirical research. Subsequently, recommendations will be provided to non-consulted actors when this is deemed appropriate.

Proposition for Organisational Structures Tailored towards Office Conversion

A comparison between the project structures currently present in literature and those who are mentioned during the empirical research. The final proposition should assess the suitability of the literature based organisational structures and the manner in which the empirically observed structure are of added value to the existing knowledge.

Section B: Theoretical Framework

Structure Literature Study

The first steps which have to be taken revolve around the demarcation of existing literature on office conversions and the governance structures currently used to govern Dutch conversion projects. The aim of the literature study is to define a preliminary answer to the three sub research questions displayed below. A depiction of the search strategy used in the literature study can be found in Appendix B1: Search Strategy Literature Study. The literature study provides input for the empirical segment of the research through expert interviews. This allows for a comparison between the views displayed in current literature and those perceived by actors in practise. The initial hypotheses related to the sub questions are displayed in italics below the corresponding questions.

1. Which activities and corresponding project roles have to be carried out in an office conversion project?
   Risk allocation can be divided into two possible central hub roles in office conversions, fully risk bearing or fee-developer.
2. Which project governance structures and risk-/liability allocation are in common use for office conversion projects since 2008?
   The type of market party which fills the central hub role does not directly affect the most suitable form of collaboration used to govern the relationship client/central hub party.
4. Which project role based factors have an impact on the (financial) feasibility of Dutch office conversion projects?
   Using a risk allocation based upon competencies could improve project performance.

For sub questions 1 and 2, a comprehensive outcome should be presented after completion of the literature study. As for sub question 4, the literature research will be limited to setting up a framework which is to be checked against empirical data. The structure of the literature study along with its links with other chapter is displayed in figure 12.

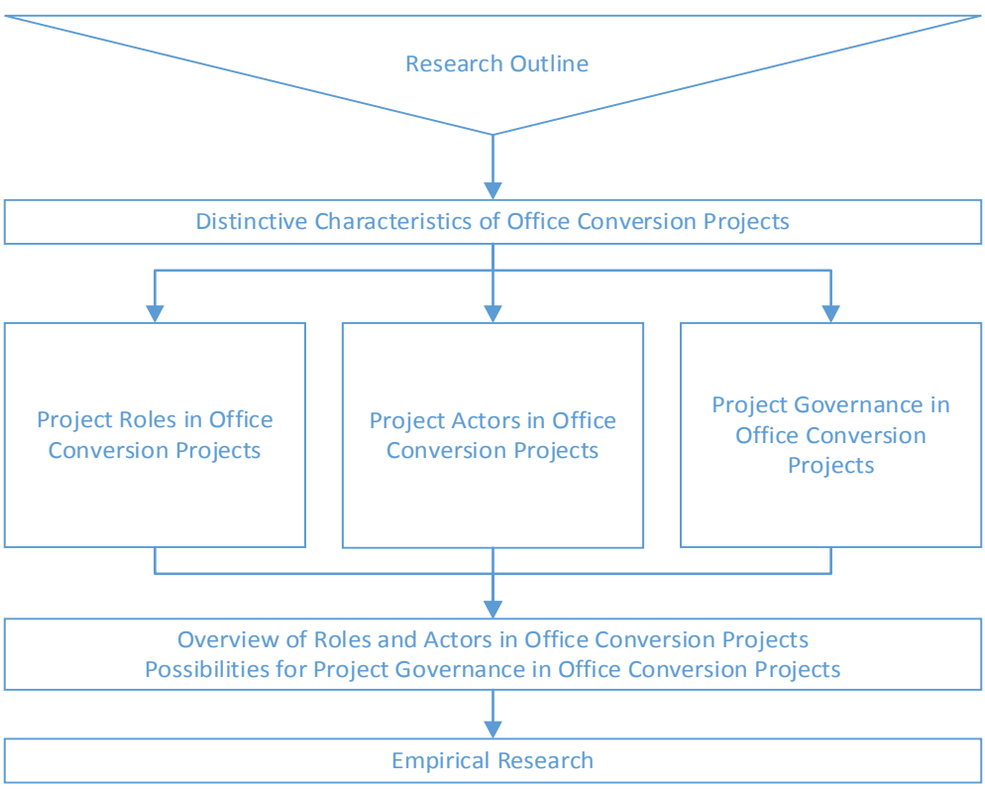

Figure 12: Structure Chapter Literature Study (Own Illustration)

3 The Office Conversion Process

Taking up a project which involves the conversion of an existing office building rather than starting out with vacant land plot could involve different tasks and responsibilities. The aim of this chapter is describe the process of converting a vacant office building into a marketable asset through a change of function and pinpoint the differences between the process for conversions and new-built real estate.

Conversion (or adaptive re-use) of existing real estate assets is described by Latham (2000) in the following definition.

> *"A process that retains as much as possible of the original building while upgrading the performance to suit modern standards and changing user requirements."*

The following elements from this definition are of importance for research into roles and governance in office conversion.

- Process, a series of activities which involves multiple phases, actors and responsibilities.
- Upgrading the performance, increasing the fitness for purpose based upon demand by client and/or user.
- Modern standards, both legally binding and non-binding statutory regulations have to be adhered to.
- Changing user requirements, in the case of offices buildings indicated by structural vacancy.

3.1 Relevant Characteristics of Office Conversion Projects

In order to assess which factors could have an influence on the roles and role governance within the arena of office conversion, the first step is to reduce the existing literature on office conversion and reduce it to those unique characteristics with a possible influence on the manner in which the project roles are formalised. In order to complete an office conversion process, the following main elements of the existing office have to be addressed. The elements are presented in order of perceived influence on buildings costs and project complexity (De Vrij, 2004; Douglas, 2006; Mackay et al., 2009).

1. Facade
2. Inner walls
3. Contractor costs
4. Frame
5. Installations (Mechanical, Electrical)
6. Floors and roofs
7. Foundation
8. Terrain (works, not acquisition)

The general consensus in literature thus far is that the main project phases of an office conversion project do not differ from a new built real estate project (Douglas, 2006; Kastes Development, 2012; Mackay et al., 2009). The outcome of a conversion project is not different than that of a new built project. However, the manner in which the steps required in the process are carried out does differ for a conversion project. Table 8 contains an overview of the main processes in office conversion.

Table 8: Phases in Conversion Projects, Created by Author based upon Peiser (2015), Andriessen (2007), Vervloed (2013), Douglas (2006) and Van der Voordt and Geraedts (2007)

	Initiation (1/2)	***Feasibility (3)***	***Design (4/5)***	***Realisation (6)***	***Operation and Maintenance***
Product	Project Brief	Feasibility Study; Preliminary Design (VO)	Preliminary Design (VO); Detailed Design (DO)	Executional Design (Uitvoerings-ontwerp: UO)	Operation and Maintenance Plan
Decisions	Actor-Role Allocation	Green-Light (Go/No Go); Acquisition	Design Approval	Handover; Sale	
Critical Activity *(Compulsory)*	Reaching agreement on devaluation of asset	Obtaining permits for changes to land-use plan; Obtaining permits for listed buildings	Obtaining environmental permits.		
Process Activities	Setting boundary conditions for time, cost and quality; Assessment of market conditions related to project.	Assessment of project cost and value.			

The main differences between conversion (or: adaptive re-use) and new built real estate projects with a possible effect on project roles and role governance are perceived to be as follows.

The first difference between new built projects and conversion projects is characterised by a stronger emphasis on the Initiative and Feasibility phases (Andriessen, 2007; Kurul, 2007). This emphasis is substantiated by Andriessen (2007) into an advice where advisors (no distinction is made between technical advisors and process advisors), managers and architects should be involved earlier on in the process. The role of the contractor and other realisation actors is not mentioned in the advice, assuming these actors only start having a project role at a later stage as a builder once the detailed design has been finalised. As for the manner in which regulatory involvement in the project phases related to conversion projects causes stagnation in the process, there is a difference between new built real estate projects and (office) conversion projects. Gelinck and Benraad (2011) point out that in converting a vacant office building, public entities (i.e. regulators) should emphasize the earlier phases of the project (Initiation and Feasibility). This view follows from earlier research (Gelinck, 2007) and is supported in terms of increasing the financial feasibility of conversion projects by Schmidt (2012).

Conversions of real estate assets are deemed to be more complex than new built assets in terms of interdependencies between project activities as well as differences in views between actors involved (Kurul, 2007). The main sources of this higher level of perceived complexity stems from;

1. The necessity to create a design within the confines of an existing structure, in terms of exterior, interior and installations (Andriessen, 2007; Bullen & Love, 2010).
2. The conflicts in prerogatives by actors involved in relation to value capturing (Kraag, 2015).
3. The reluctance of pre-conversion asset owner to carry out devaluations in order facilitate conversion projects (Van Gool, Brounen, Jager, & Weisz, 2007).
4. The distance of pre-conversion asset owners to the conversion process (Bullen & Love, 2010).

Within his publication, Kurul (2007) denotes that whether or not the developer (by means of the actor "Traditional Project Developer") bears more risk, the spike in project complexity is situated early on in the project, whereas an outsourcing of risks (i.e. external funding) tends to result in a higher level of initial complexity followed by a less steep increase of complexity as the project progresses. This complexity is increased by the notion that the effects of economic fluctuations appear to have a stronger influence on the willingness of actors to bear risk in conversion projects then with new built real estate development of comparable scope (Aldair, Berry, & McGreal, 2003). This entails that an economic downturn, as is described through the data for office vacancy (See: chapter Research Framework), results in an increase in inhibitors related to project governance and actor allocation concerning getting office conversion projects past the feasibility decision.

When comparing the process of converting individual office assets with area transformation, Nelisse (2008) points to the split between land development and asset development. With a special emphasis on the notion that an office conversion carried out by commercial market entities usually only involves the development of the asset, without the possibility for using the land plot development to make up any possible lack of development value of the conversion of the asset itself. Putman (2010) outlines the possibilities for real estate developers (actor, not role) changing their market role in the redevelopment of inner city areas. The conclusion is that real estate developers should move away from developing through land plot ownership and focus on the development of assets in times of economic decline. With the regulation of plot development being the realm of the local government in the Netherlands, this could add a side note on the "make or break" status and the role of the municipality in office conversion to the empirical outcome presented by Kraag (2015).

3.2 Risk and Value of Office Conversion Projects

Research into value and feasibility of conversion projects has been carried out by various authors in the past. This paragraph shall focus on the effects of project risk and value on actors and roles across the project phases described in table 8.

3.2.1 Project Risk in Office Conversion Projects

The specific nature of office conversions brings with it a distinctive set of project risks. Remøy and Van der Voordt (2014) have carried out a cross case analysis which produced the following project risks related to office conversions in the Netherlands.

Table 9: Project Risks Office Conversions (Remøy & Van der Voordt, 2014), Project phases in bold added by author

Category	*#*	*Risk*	***Project Phase (Table 8)***
Legal (Public Law)	1	Zoning law: Impossible to meet municipal requirements, zoning law, city policy	Initiation, Feasibility
	2	Building code: Impossible to meet requirements e.g. regarding noise-level and fire-precautions, the municipality is unwilling to cooperate	Design, Realisation
	3	Monumental act. The monumental status does not allow adaptations that are required to match future user needs	Initiation, Feasibility
Financial	1	Development costs: slow handling of procedures (loss of income, high interests)	Not phase specific
	2	Vacancy: failing incomes from exploitation or sale of the apartments	Operation and Maintenance
	3	Owner not willing to sell for a reasonable price due to high book value	Initiation, Feasibility
Technical	1	Incorrect or incomplete building structure assessment	Design, Realisation
	2	Poor state of the main structure/foundation (rotten concrete or wood, corroded steel)	Design, Realisation
	3	Insufficient shafts available; construction allows no extra shafts being made	Design, Realisation
	4	Insufficient thermal and acoustic insulation in the floors and facades	Design, Realisation
	5	Insufficient daylight for housing	Design, Realisation
Functional	1	Present grid does not fit with measurements required for new purposes, resulting in waste of space or costly adaptations of the technical structure	Design, Realisation
	2	Private outdoor space impossible	Design
Cultural-Historic	1	The appearance of the building does not fit with the required appearance of the new function	Not phase specific

The five categories of project risk for office conversions concern the entire span of a project. Remøy and Van der Voordt (2014) appoint the technical and legal risks as having the highest influence on the financial feasibility of a conversion. As each of the risk clusters will be translated into financial risk and consequence. Shipley, Utz, and Parsons (2006) argues that the main importance for project risk in office conversions amounts to securing backing from investors in their role as pre-conversion owner. For office conversions, the most common forms of financing are a private equity investment (from a funder or parent company to the developer) and bank loans. As mentioned before (see: chapter Research Framework), the availability of bank finance is decreasing since 2008, assigning a stronger importance (and therefore stakeholder power) to the role of the private investor (Putman, 2010; Shipley et al., 2006).

The links between the importance of the risk clusters and the links to the project phases shows that there is a group of Initiation/Feasibility risks and a group of Design/Realisation risks. As for risk management and role/ actor involvement, Shipley et al. (2006) advices early collaboration, especially for managing realisation risks.

3.2.2 Value of Office Conversion Projects

Determining the financial characteristics related to the financial feasibility of a construction project involves two main couplings (De Ridder, 2013). On the one hand the coupling cost versus income and on the other hand the coupling quality and value. Project cost and income are directly related to the construction activities of a project are measurable and often comparable to create a project balance which should not vary based upon the actor involved (no perception component). When comparing building costs (without actor perception), Bullen (2007) notes that creating an upfront cost estimate for conversion projects is more difficult than for comparable new built real estate projects due the before mentioned increase in complexity (Kurul, 2007). The coupling quality and value possesses a much stronger variety depending on the actor involved, a perception component or fitness for purpose (Van Gunsteren, 2011).

When assessing the value of a vacant office building, the decision to convert the asset from an office function to a post-conversion function can only be made when the project possesses a positive outlook on the return on investment. Heat (2001) argues that the pre-conversion owners are reluctant to convert vacant office buildings because this would result in the rent income of the office be significantly lower than the expected income generated by the function after conversion.

Segeren (2007) and Kraag (2015) provide the following possibilities for appropriating value form office conversions to actors involved. All factors mentioned below add up to the eventual price point at which the converted asset is sold to its post-conversion owner.

- The value of the land plot and the real estate asset in its original condition (prior to any transaction) should be allocated to the original owner. A side effect of this could be that the market value for the conversion could be lower than the valuation by the owner. This would result in a negative value and a reluctance to sell (i.e. mothballing the asset).
- The added value of developing the land and the asset is most likely allocated to a Real Estate Developer. This could however also be allocated to any market entity with the ability and willingness to bear the development risk. The development value consists of the process of starting at the acquisition of the assets and ending with the sale of the asset to the post-conversion owner.
- The investment cost and profit margin of realisation are to be appropriated by the contractor. No mention is made concerning the possibilities of combining this element with the development risk.

In terms of determining the value of a real estate asset, Van Gool et al. (2007) as well as Geltner, Miller, Clayton, and Eichholtz (2010) state that the terms market value and the investment value of the asset are used when initiating office conversions. The above mentioned authors state that in terms of role involvement, market value is the realm of current asset owner and the valuation assessor. This valuation is strictly a pre-conversion matter based upon market- and asset data. Investment value on the other hand is described as involving the post-conversion owner, the developing entity and the future operator, this type of value is of a more speculative nature.

"Market value is the expected price at which the asset can be sold in the current property market." (Van Gool et al., 2007) and "The investment value of a property is its value to a particular owner, who would be owning and operating the asset for a long period of time, and explicitly not planning to sell the asset for a long period of time." (Geltner et al., 2010)

In order to try and create uniformity in valuation of the conversion project, the IPD advices to value conversion (redevelopment) projects as follows. "The market value of a partially completed investment property will reflect the expectations of market participants of the value of the property when complete, less deductions for the costs required to complete the project and appropriate and all key assumptions used in the valuation should reflect market conditions at the valuation date." (IPD, 2013)

Whilst succeeding in describing the value of a conversion in a manner which is easier to compare against new built real estate projects, the IPD definition displayed above does however increase the importance of the value perception by the actors (market participants) involved.

Besides the split in value perception, the value aspect also has to be split from the development perspective for the developer. Whereas the traditional manner of creating value through redevelopment revolved around obtaining land plots in prime locations (land development), another possibility for value creation through the actual improvement of the asset through conversion (asset developer). In the latter case, there is a possibility for split ownership in land and asset (Kuijpers, 2010; Putman, 2010).

3.3 Sub Conclusions Office Conversion Process

In relation to a new built real estate construction project, conversion projects are perceived by the actors involved to be more complex, both in terms of process as well as in the required activities. Important factors in terms of actor involvement and value creation are as follows.

- The project phases related to office conversions do not differ from new built real estate assets. A higher level of project complexity requires earlier involvement of developers, architects and advisors during project Initiation and Feasibility.
- Conversion projects are more complex than new built projects. The higher technical of complexity stems from the necessity to work within an existing framework. The higher procedural complexity is caused by the necessity to facilitate a devaluation of the existing asset and obtaining the changes to the land-use plan on top of the common building permits. Stemming from the project complexity, the following factors are critical in getting a conversion project past the Initiation and Feasibility phases.
    - Organising the project in order to facilitate possibilities for sharing the devaluation of the vacant asset.
    - Allocating the development risk to a suitable actor.
    - Obtaining the changes to the land-use plan.
- There are many project risks which can occur during the design and realisation phase of an office conversion project (especially technical risks), even though general literature shows that the complexity of conversions projects is situated within the Initiation and Feasibility phase. There is no distinct model for the allocation of development and marketing risk to a specific role.
- Creating value for conversion projects is more difficult than for a new built project due to the change of function and often ownership as well. Value is calculated and perceived differently by investors and developers. It is closely interconnected with perceived project risks and allocation of project risk.

4 Project Roles in Office Conversion Projects

Specific literature on the definition or division of distinctive project roles tailored towards office conversion projects has, to my knowledge and research, not been created as of yet (June 2016). To provide a starting point on which to build knowledge concerning these project roles, the following sources of information are utilised. These sources are selected in such a manner that they surround the specific topic of this research.

Figure 13: Refinement of Project Roles (Own Illustration)

General project roles for construction projects are described across several publications. Within this research, publications by Zwikael and Smyrk (2011), Mosey (2009) as well as Bosma and De Ridder (2013) are compared to distil the essential roles to be filled within construction projects.

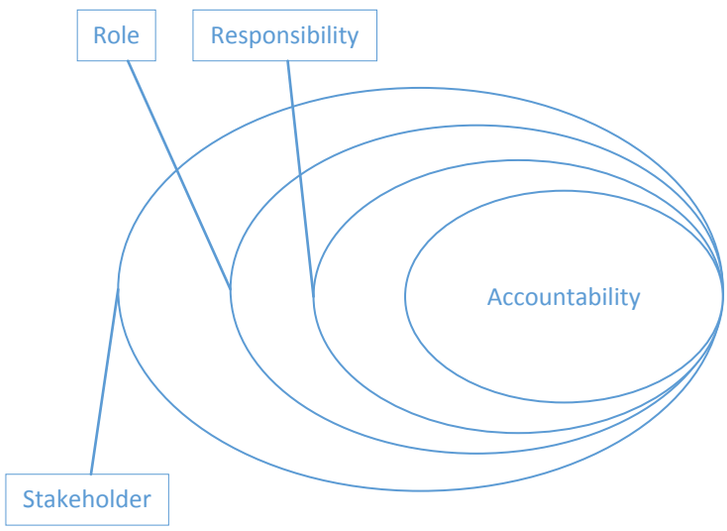

Figure 14: The relationship between stakeholder, roles, responsibilities and accountabilities

(Zwikael & Smyrk, 2011, p. 28; Content directly quoted; Format altered by author)

Zwikael and Smyrk (2011) provide the following definition for a project role;

"A role for an entity arises when a project-related activity requires the involvement of that entity for its completion. For example, the utilisation of a project's outputs requires the involvement of project customers and so project customers fill a role in a project." (p. 29)

The most important notion in this definition is a role which requires active participation of an actor in order to aid to the outcome of the project. This creates a distinction between the "stakeholder" and the "actor". The involvement of the stakeholder is either passive or active and the role of the actor is always active.

The definitions used for responsibility and accountability are as follows.

"A responsibility arises when a role is based on a formal agreement by the relevant entity to participate in certain activities." (p. 29)
"An accountability arises when a responsibility is subject to agreed rewards/penalties. An accountability must be accompanied by one or more authorities (powers to take specific actions or make particular decisions). Without authorities, accountabilities collapse into responsibilities." (p. 29)
The definitions presented for responsibility and accountability give a subsequent link between project roles and project governance structure. With the structure and relationships between project roles, project governance consists of combining the division of distinct responsibility with accountability and contractually binding the roles (and actors) to the project.

Based upon the different stages of the project, a distinction in depth of project role has to be made. When drafting the business case during project initiation a generic description of the role usually suffices (Zwikael & Smyrk, 2011, p. 143). As the pre-construction phases progress, the description of roles has to be defined further and linked to specific (physical) elements of the project in order to be able to obtain an approved project governance structure.

The research effort, initially by B. Nutt (1993) and subsequently extended by Douglas (2006) provides a general description of six groups of participants described within the confines of the larger scope of building adaptation (without differentiating for type of adaptation or size of the project). This research was purposely carried out within a broad scope and was therefore very useful as a first demarcation of project roles. Another manner in which the research topic can be approximated is through use of literature written for distinctive project roles for a different specific type of asset conversion. In this case, conversions of large industrial space with the purpose of creating multifunctional spaces for creative entrepreneurs. The model generated by Schönau and De Bruijne (2008) provides a template for the type of content which should be present in a role governance model for office conversion.

4.1 General Project Roles for Construction Projects

Table 10 contains an overview of how project roles are described across three main sources of management literature written in the context of the construction industry. The objectives of each of the publications do however differ.

1. The project role descriptions in Mosey (2009) are written against the backdrop of assessing the suitability of early contractor involvement in construction projects.
2. Zwikael and Smyrk (2011) formulate project roles in order to validate the notion that project organisation can increase the value for the host companies involved.
3. Nicholas and Steyn (2012) is written from a more descriptive standpoint and contains project roles based upon existing literature.

Table 10: Overview of General Construction Project Roles (Not Assigned to Specific Actors) According to Various Sources; Elements in bold added by author; Contents of table are quotes

X = Definition not mentioned in publication	*Mosey (2009)*	*Zwikael and Smyrk (2011)*	*Nicholas and Steyn (2012)*
Client	He who sets the brief, appoints other team members and makes the payments. Client is not always the end user.	X	X
Project Owner	X	Entity which acts as the funder's agent during execution. Project Owner is to be held accountable by the Funder for target outcomes.	X
Initiator	X	At its inception, each project has a "champion"—someone who wants to see the project funded and who will also lead the exercise through to the point where a business case is accepted by the funder.	Customer organisation undertakes a brief initial investigation in order to cull a few good ideas to address a perceived problem.
Funder ***(Asset Owner) (Investor)***	X	A funder is an investor in the project who seeks a future flow of desirable outcomes as a return on the funds made available for the exercise.	X

X = Definition not mentioned in publication	*Mosey (2009)*	*Zwikael and Smyrk (2011)*	*Nicholas and Steyn (2012)*
Creator	Entity which is responsible for producing the design within the confines of time, cost and quality.	X	X
Project Manager	Entity who is most likely to define the combination of team members and the structure of the team, (then logically) it is also the party best placed to integrate the roles and responsibilities of those team members.	Entity who runs the project.	Project managers work at the project–functional-user interface, integrating project elements to achieve time, cost, and performance objectives.
User/Customer	X	Those who create target outcomes by using the project's output.	Those who use the final product or service which is created by the project.
Project Sponsor/ Project Champion	The project champion is responsible for preparing and tabling the business case, and, accordingly, drives and guides the process of initiation.	X	Actors who speak in favour of the project and support in facilitating the project.

Across literature, several noticeable discrepancies can be observed.

1. There does not seem to be a consensus on the activities and accountability on the divide "Project Owner" versus "Project Manager".
2. The role of "Initiator" is only mentioned in overlapping scope, unlike in literature specific to real estate conversion, in which it is described in detail (De Zwart & Janssen, 2014; Douglas, 2006; Putman, 2010). The contents of role of "Initiator" do possess an overlap with the role "Project Sponsor/ Project Champion" (according to Zwikael and Smyrk (2011)) and the client (customer) (according to Nicholas and Steyn (2012)) in general management literature.

4.2 Participant Clusters in Conversion Projects

The original notion of project roles in conversion projects is by B. Nutt (1993), who presented a conference paper which outlined the of roles and actors in what is called "Building Adaptation" The groups described in table 11 are formulated using the British legal and organisational system. Nutt divides them into the following groups of participants for traditionally procured (in the Netherlands: Design-Bid-Build) conversion projects.

Table 11: Participants in the Adaptation Process (Douglas, 2006; B. Nutt, 1993), Elements in bold added by author

#	*Participant* ***(Role)***	*Involvement*	*Examples* ***(Possible Actors)***
G1	Investor Group	Those who arrange capital to fund adaptation projects and purchase buildings	Banks, Finance companies, Insurance companies, Pension funds
G2	Producer Group	Those who design, specify, cost and execute adaptation projects	Architects, Builders, Engineers, Surveyors
G3	Marketing Group	Those who finds users for buildings and buildings for users	Estate Agents and Surveyors
G4	Regulator Group	Those who ensure compliance with the statutory requirements	Building control, Fire authority, Health and Safety Executive
G5	User Group	Those who occupy, manage and use the building	Individual users, Facilities and Maintenance managers
G6	Developer Group	Those who undertake some or all of the investor, producer and marketing roles above	Contractors, Development companies

Douglas (2006) expanded on the publication by B. Nutt (1993) with the differentiation between individual clients (who have limited access to financial means) and corporate clients (who, according to Douglas (2006), have easier access to financial means to carry out adaptation projects). Within this research, individual clients are not taken into account. But the notion of accessibility of financial means could be extrapolated as an important criterion to assess which actor is suitable to fit which role in Dutch office conversion projects.

Five out the six participant groups in table 11 are clearly defined, with the involvement of the group being described as a specific task. The Developer Group is the exception to the rule. The relative vagueness of this group seems to correlate with the description of the problem and forms a current blind spot in terms of literature. Putman (2010) (MSc Thesis City Developer at Erasmus University Rotterdam) has carried out research into what tasks the developer should pursue when it comes to area development, but she has left the question of which actor should fill the "developer role" unanswered. Unfortunately, neither B. Nutt (1993) nor Douglas (2006) go into further detail as to the actual fitness for purpose of actors within a participant group.

4.3 Project Roles in Conversion of Vacant Industrial Complexes

In the Netherlands, conversion of industrial space has been carried out on a larger scale longer than the vacancy induced conversion of office space since 2008. Within the realm of conversion of industrial space for use by creative entrepreneurs, Schönau and De Bruijne (2008) have developed a description of the project roles for this specific type of conversion. Besides from the function difference (both pre- and post-conversion), the main difference between the research scope by Schönau and De Bruijne (2008) is the level of finishing of the interior. The research of industrial space most often involves a rough finish of the asset (which results in shorter and less complex realisation phase), while this research involves projects with a higher level of finishing post-conversion, emphasising the realisation elements in project roles. The main characteristics which should be part of a role governance model in conversion projects are, according to Schönau and De Bruijne (2008); Market knowledge, Trust between actors, Access to financial means and Creativity.

Table 12: Development Roles in Three Phase Model (Driefasenmodel) (Schönau & De Bruijne, 2008, Translated from Dutch by Author), Elements in bold added by author

Role ***(Participant)***	*Task* ***(Involvement)***	*Activities*
Host (Gastheer)	Providing boundary conditions to tenant Generating "traffic" on project site	Pro-active management; Offering asset in loan; Offering flexibility
Concept Developer (Conceptontwikkelaar)	Exploring of opportunities of project site Phasing out successful concept	Constructing recognisable tenant pool; Creating template programme; Offering services
Market Manager (Marktmeester)	Involving local tenants Operational management	Subletting of asset; Local knowledge and contacts

With the ownership- and usage structure of offices assets being more rigid than is the case for industrial space, the following activities are likely to not be transferable.

1. Offering assets in loan by the Host; with office assets often being owned by investors or a combined owner/user (Remøy, 2010a). The possibility of loaning out the asset (essentially free of charge) is likely to create more organisational obstructions rather than expedite the process.
2. With the existing structure of office assets being more complex and less adaptable than industrial space (Kurul, 2007), each conversion project has to be treated separately. This reduces the possibilities for the creation of a template programme by the actor filling the Concept Developer role.

4.4 Elaboration of Project Roles

4.4.1 The Developer

In office conversion projects, the client role is most often taken up by the same actor which also fills the developer role through temporary ownership (Kraag, 2015). This is unlike new built real estate project, in which the client role can be filled by either tenants, developers, investors or funders (Ball, 2006). Therefore, the client in office conversion projects is assumed in literature to be the same as the developer. A solution of the lack of substantiation of the developer role by B. Nutt (1993) and Douglas (2006) is provided in the publication by Van Gool et al. (2007).

Table 13 compares the targets with the before mementioned participant groups (table 11).

Table 13: Comparison Developer Targets by Van Gool et al. (2007) with Participant Groups by B. Nutt (1993) and Douglas (2006)

Seniority (Descending)	*Target (Van Gool et al., 2007)*	*Fits in Group (Douglas, 2006; B. Nutt, 1993)*	*Related to Project- or Corporate Goals*
1	Offer integral solutions (to the client) for spatial planning problems.	Producer	Project
2	Realise real estate projects in a risk bearing position.	Producer/Investor	Project
3	Approach the different phases of real estate development in an integral manner.	-	Project
4	Play a coordinating role in multiple (Dutch term used: verschillende; Literal translation: several) phases of (real estate) development.	-	Project
5	Generate a profit	Investor	Corporate

The most obvious difference between the developer targets by Van Gool et al. and the definition by Nutt and Douglas is the absence of the marketing group among the targets. It could be stated the marketing involvement of matching a user to a building, and the other way around (Douglas, 2006), could be part of the integral approach in different phases of real estate development (target 3), but this is not explicitly mentioned by Van Gool et al. (2007). If this is not the case however, the tasks related to the marketing group (i.e. brokerage activities) have to be carried out by an advisor with a distinct split between marketing and development.

In E. F. Nozeman and Fokkema (2010), a total of 7 characteristics which describe what a real estate developer should be, are set out. Just like with the majority of literature on the role of the developer; these characteristics are written with the assumption that the (fully risk-bearing) development role should be filled by a real estate developer. These characteristics are originally published in Dutch and have been translated into English.

Table 14: Comparison Developer Targets by E. F. Nozeman and Fokkema (2010) with Participant Groups by B. Nutt (1993) and Douglas (2006), Elements in bold added for clarification. Translated from Dutch by author.

No Seniority Mentioned by (E. F. Nozeman & Fokkema, 2010)	*Target (E. F. Nozeman & Fokkema, 2010)*	*Fits in Group (Douglas, 2006; B. Nutt, 1993)*	*Related to Project- or Corporate Goals (E. F. Nozeman & Fokkema, 2010)*
-	The project developer is willing and able to invest in the entire process of real estate development and realisation.	Investor	Project
-	The project developer bears the financial risk **(ad. related to the project)**, up until the moment the completed real estate is sold and/or rented out.	Investor	Project
-	The project developer knows the **(ad. real estate)** market, he is able to track down the demand for real estate in both a quantitative and qualitative manner.	Marketing	Project/Corporate

No Seniority Mentioned by (E. F. Nozeman & Fokkema, 2010)	*Target (E. F. Nozeman & Fokkema, 2010)*	*Fits in Group (Douglas, 2006; B. Nutt, 1993)*	*Related to Project- or Corporate Goals (E. F. Nozeman & Fokkema, 2010)*
-	The project developer possesses the creativity to translate the market knowledge and the demand into a real estate concept.	Marketing/Producer	Project
-	The project developer takes upon himself the management task (ad. for the project). He possesses a steering role for all parties involved with the project within the boundary conditions of (among others) time and money towards the contemplated output.	-	Project
-	The project developer usually takes the initiative for the development. He is able to spark enthusiasm for concept. On top of this, the project developer is able to keep the project team together for the duration of the project.	-	Project
-	Motivated by the fact that the project developer carries out his task under varying **(ad. project)** conditions, he is the most suitable actor to take up the role of professional **(ad. project)** client.	Marketing	Project/Corporate

When all seven characteristics are combined and compared with the group characteristics by B. Nutt (1993) and Douglas (2006), the groups Investor, Producer, Marketing and obviously Developer are allocated under what Douglas (2006) calls the "Development company". This coincides with the actor 'real estate developer' in the chapter Research Framework

Combining the two elements described above poses the combination of the type of entity (or entities) which make up the "Developer Group" and the corresponding links of the "Developer" to the groups "Investor", "Producer" and "Marketing". This is especially important for projects wherein the responsibility of obtaining projects funds is not allocated to the client.

One of the elements mentioned by Kurul (2007) in his empirical study on "how to approach adaptive re-use processes" is the distinction between a value (quality) driven project and a cost driven project on the position of the real estate developer. Kurul (2007) concludes that for a value driven project, it is not so much the project risk itself which has an impact on the project, but in fact the risk behaviour of the developer (actor, not the role) which makes up the significant content of the developer's influence.

Concluding, the developer role encompasses the following elements in relation to project activities.

- Combine market knowledge and project knowledge
- Serve as professional project client or as an agent to the client.
- Serve as the continuous party who is involved throughout the entire project from initiation to handover/delivery.
- Take upon him the responsibility for a project risk for development of the conversion.
- When appropriate, take up responsibility for the project risk related to asset ownership.

4.4.2 The Initiator

A type of role which is mentioned in project management literature (E. F. Nozeman & Fokkema, 2010; Schönau & De Bruijne, 2008; Van Gool et al., 2007), but not by B. Nutt (1993) or Douglas (2006) is the importance of the initiator within office conversion projects. With the scope of the publication by Douglas (2006) capturing conversion projects in the most general sense, from adaptations of individual houses (initiated by a private person) to large scale conversions (initiated by public or private clients), it is likely that the variety in actors which can initiate a conversion project is varied.

The above mentioned lack of presence of the initiator role in the publications by B. Nutt (1993) and Douglas (2006) is partly addressed by Bosma and De Ridder (2013), who have carried out a study into the characteristics and fulfilment of the initiator role (Dutch term: "Kartrekker"). Their research pointed towards a necessity for flexibility and creativity in the Initiator role twinned with a perseverance to make the process into a success. Dalhuisen (2014) goes even further and states that creative professionals should not only initiate conversion projects, but serve as intermediaries up until handover of the final project to the post-conversion asset owner. Vervloed (2013) describes that the initiator role is highly variable and could be filled by a traditional real estate developer, a local government, an architect or an asset owner. Floris Alkemade, who is responsible for real estate plan monitoring for the Dutch national government (Interview with Rooijers (2016)), confirms that the role of the initiator in conversion projects should revolve around creativity and the ability to display what is possible with existing vacant office space and not around financial and risk related decisions. Ball (2007) and Yavas (1994) outline the need for adequate market knowledge when initiation a real estate project, with the side note that conversion projects require a larger amount of market knowledge due the pre-conversion market (office)being different from the post-conversion market (residential).

According to Gelinck and Benraad (2011), the most suitable actor for project initiation is one who has ownership of the asset prior to conversion. If it turns out that the most financially sound decision for this owner is to leave the vacant asset as is (i.e. mothballing), initiation should be supported by local governments through visualisation (creative producer role) and feasibility studies.

In general, the project initiator role contains of the following responsibilities.

- Create enthusiasm for the project through conveying of possibilities, even when financial feasibility of the project has not yet been determined.
- Maintain close ties to the local government and regulators during the initiation and feasibility phase.
- Possess knowledge on both the market situation of the pre-conversion functions (office space) as well as the post-conversion market.
- Depending on the technical expertise of actor who fills the initiator role, initiation could also involve project supervision.

4.4.3 The Regulator

The role of the regulator in office conversions exists on both a municipal level as well as a national level, the role encompasses facilitating, evaluative and enforcing tasks (De Zwart & Janssen, 2014). The municipal regulator can be involved in office conversions on two different levels. The facilitating role encompasses that the regulator makes an effort to ease the process of completing changes to the land-use plan and obtain the construction-/environmental permits. General consensus is that this type of involvement is best suited to smaller municipalities. Larger municipalities are able to take up an active role in supporting conversions of vacant offices through task forces. This approach would make them part of the development team and raises the question whether or not the regulator is involved in a risk bearing manner (Douglas, 2006; Gelinck & Benraad, 2011). Rhodes (2000) as well as P. Jones and Evans (2006) describe the best-practice behaviour of local government in redevelopment projects as facilitating through a position of diplomacy rather than steering/control.

On a national level, the role of the regulator is limited to setting technical standards with which the work process and post-conversion asset has to comply. Active involvement of a national regulator is perceived to be scarce and unwanted. Huizinga and Ossokina (2014) pose that regulation through imposing financial sanctions on vacancy or subsidies is inherently unfair and will only lead to resistance from real estate asset owners. The chances of successful market stimulation through such interventions on a national level are perceived to be slim, with chances on a regional/municipal level not being much larger.

4.4.4 The Investor

The investor is perceived to be the most powerful role in office conversion, even though this project role is situated outside of the conversion process (larger distance to process). Since 2008, there have been changes to the content of what Nutt calls the "Investor Group", with the types of funding (and primarily and the sources of funding) have altered since 2008. For the Dutch property conversion market (and the Dutch real estate market in general), banks were responsible for a majority share of project funding before 2008, which was forced to shift more towards alternative funding and cooperation since 2008 (Mackaaij, 2015). Investors (in the form of asset owners) are characterised by being distant from the office conversion process. The investor does not wish to take part in the process and views real estate assets as just another class within a multiclass investment portfolio (Guironnet & Halbert, 2015).

Within the confines of this research, there are two distinctions which have to be taken into account in terms of investor behaviour. The first distinction which has to be made is between the short term objective (known as the growth objective) and the long term objective (current cash flow objective) (Geltner et al., 2010). The second distinction is the split in direct and indirect investment in real estate assets. When comparing these objectives, Zwikael and Smyrk (2011) describe the funder (the investor group) as the most powerful stakeholder within a project and the stakeholder with which all lines of accountability in a project end.

The difference between short-term and long-term objectives can be translated into the strategy which the investor (asset owner) can employ when faced with office vacancy. The most rigorous decision is that investor can decide to sell of the property to a developer, who bears responsibility for the conversion process. This type of decision is however rare due to the need for devaluation of asset by the investor to facilitate a sale. (Brueggeman & Fisher, 2010; Van Gool et al., 2007) When such a structure is decided upon, the investor itself plays no further part in the conversion up until the moment it can possibly buy back the asset from the developer. A more long-term decision is for the investor to retain ownership and involve the developer in a structure in which the developer only bears responsibility for the development risk, with the market risk being allocated to the owner. This structure would reduce the need for asset devaluation but does expose the investor to a higher overall project risk. In other words, the gain might be higher, but so is the possible pain. A decision to retain ownership is more likely to occur in a diversified investor portfolio in which a single asset has a limited effect on overall portfolio performance (Brueggeman & Fisher, 2010).

The third possible course of action an investor can take is to do nothing at all when vacancy occurs. This type of decision mainly occurs when the vacant office building is part of a large, multi-faceted portfolio in which the investor does not feel pain when being faced with individual vacant offices (Decisio BV, 2006). This would require increased activity by the initiator role in order to turn this type of situation around and try to turn a conversion initiative into a project. (Gelinck & Benraad, 2011; Zuidema & Van Elp, 2010).

In general, the power of the investor is situated in deciding what to do with their property prior to initiation. Literature shows that an overlap of the investor role and the initiator role being filled by the same actor is rare, in which case the role of the initiator become more important when aiming to increase project feasibility (Zuidema & Van Elp, 2010). The most important interconnection between the investor and other project roles is between the investor role and the developer role. Theurillat and Crevoisier (2013) go so far as to describe the role of the developer as an intermediary between the investor and the regulator. This would bring the developer role closer to the fee-advisor role.

4.4.5 The Advisor

The need for involving advisors in real estate development- and office conversion projects is such that the developer role is inherently focused on approaching the project in general and binding every specialism together (Peiser, 2015).

The responsibilities and objectives of advisors in conversion project revolve around assisting the actor who hired them based upon a fixed fee or invoice based payment structure. This entails that the level of responsibility and liability of the advisor is only stipulated towards one other party and limited towards the work which is carried out (Chao-Duivis et al., 2013). The role of the advisor is perceived to be vague and the amount of advisors surrounding a project can be large, possibly increasing the complexity of a project (Douglas, 2006).

As a rule in project management, advisors should only be used to supplement an absence of knowledge by the client who employs the advisor. The type of advisors required for a particular project is therefore connected with the type of actors which fill the developer- and initiator role (Gelinck & Benraad, 2011). Existing literature (Bullen, 2007; Bullen & Love, 2010; Douglas, 2006) agrees that the types of advisor involved in conversion project are similar to the advisor involvement in a new built real estate asset. With the obvious reduced involvement of demolition advisors. The level of required involvement of advisors does differ when dealing with replacement and conversion (Ball, 2003). The advisor role is perceived to be non-critical (i.e. conversion projects can be carried out without advisors) in an office conversion project in terms of responsibility and liability, but the influence embedded within the role of the advisor in terms of specific knowledge is high (Douglas, 2006).

For marketing advisors, their role of matching asset and user (both in pre-conversion as well as post-conversion sale) is not different in comparison to a standard real estate transaction. However, the importance of the marketing advisor is increased due to an asset crossing over from the commercial market to the residential market, with the pre-conversion investor and the post-conversion investor being two different entities with most marketing advisors are focussed on either end of the market (either office or residential) (Peiser, 2015). According to Ball (2007, pp. 94-95), real estate projects can benefit from being supported by a marketing advisor who possesses market knowledge of both the pre-conversion as well as the post-conversion market. He goes beyond this and states that the market for high-end residential space has similar characteristics to the market for commercial office space. Also, market dynamics for lower end residential space can be compared to the dynamics for smaller office and commercial space. The limiting factor between the comparisons is described as the increasing globalisation of the market for ownership of office space and the more localised (national) scope of the residential market.

4.4.6 The Producer

The role grouping by Douglas (2006) describes the producer group as encompassing both the task of creating the design of the conversion initiative (Initiation, Feasibility and Design), which is to be called "Designer", as well as the realisation of the design, which is to be called "Builder". Gelinck and Benraad (2011) and Bullen (2007) do however note that the producer group encompasses two distinctly separate roles, drafting the design in conjunction with marketing possibilities (the designer role) and creating the design (the builder role).

As for the designer role, the following tasks are pointed out in existing literature.

1. A complete responsibility for creation of the design (exterior and interior) and the alignment of the design with design of the surrounding area if the conversion of the office in question is part of an area development plan (Andriessen, 2007; Vervloed, 2013).
2. During initiation, the designer should work closely with the actor filling the developer role to create a design which is not only acceptable in terms of architecture and technical characteristics, but should also be in line with the demand from the market at the location of building. The design and vision created is, along with the project brief the most important tool to obtain financial means for the project (Gelinck & Benraad, 2011). This task could call for early interconnection between the designer and marketing advisors to create a balance between the design and the market demand. (Unknown, 2016)
3. The role of designer in relation to obtaining the required change in land-use plans should be one of dialogue with the regulator (municipality). The designer is described as more suitable to lead the process than the developer (Kloek, 2015; Kraag, 2015; Unknown, 2016).
4. During the realisation phase of the project, the architect can be involved in a supervising role to the main contractor in order to reduce the amount of project interfaces when moving from a detailed design (UO) to an executional design (UO) (Douglas, 2006; R. E. Jones & Deckro, 1993; Kraag, 2015).

The activities allocated to the producer group in terms of realisation are researched in a less extensive manner than for the creative role of drafting a design. The general consensus in literature is that the actor which is to serve as builder becomes involved once the detailed design is finalised by the actor filling the designer role. In general, two contractor structures are common practice for office conversion projects. The first structure is that the client selects a main contractor, who in turn bears responsibilities for the sub-contractors. The second possibility is that the actor filling the developer role itself carries out a preselection of multiple contractors, each with their own area of expertise (i.e. façade, installations, etc.) who report directly to the developer role or to a management agent (Chao-Duivis et al., 2013; Douglas, 2006).

4.5 Sub Conclusions Project Roles

Project roles in office conversion project are mainly characterised by the manner in which project risk can be taken up, interconnection with other roles and project management characteristics. These characteristics are displayed in table 15 and figure 15.

Table 15: Characteristics of Project Roles in Office Conversion Projects (Own table)

Role and Type	Main Objective	Suitable for Risk Bearing Involvement	Role could involve Project Management
Developer	Offer an integral solution within the confines of market demand in a financially feasible manner.	Development risk: Yes Market risk: Inconclusive	Yes
Initiator	Ensure that conversion project is carried out	No	Yes, during initiation and feasibility
Investor	Maximize profit on the profit which contains vacant office buildings.	Development risk: No Market risk: Yes	No
Advisor	Assist an already committed actor in achieving its objective.	No	Yes
Producer	Designer: Produce a design Builder: Carry out the design	Inconclusive	Creative: Yes Builder: Inconclusive
Regulator	Ensure compliance with statutory requirements; Reduce office vacancy.	No	No

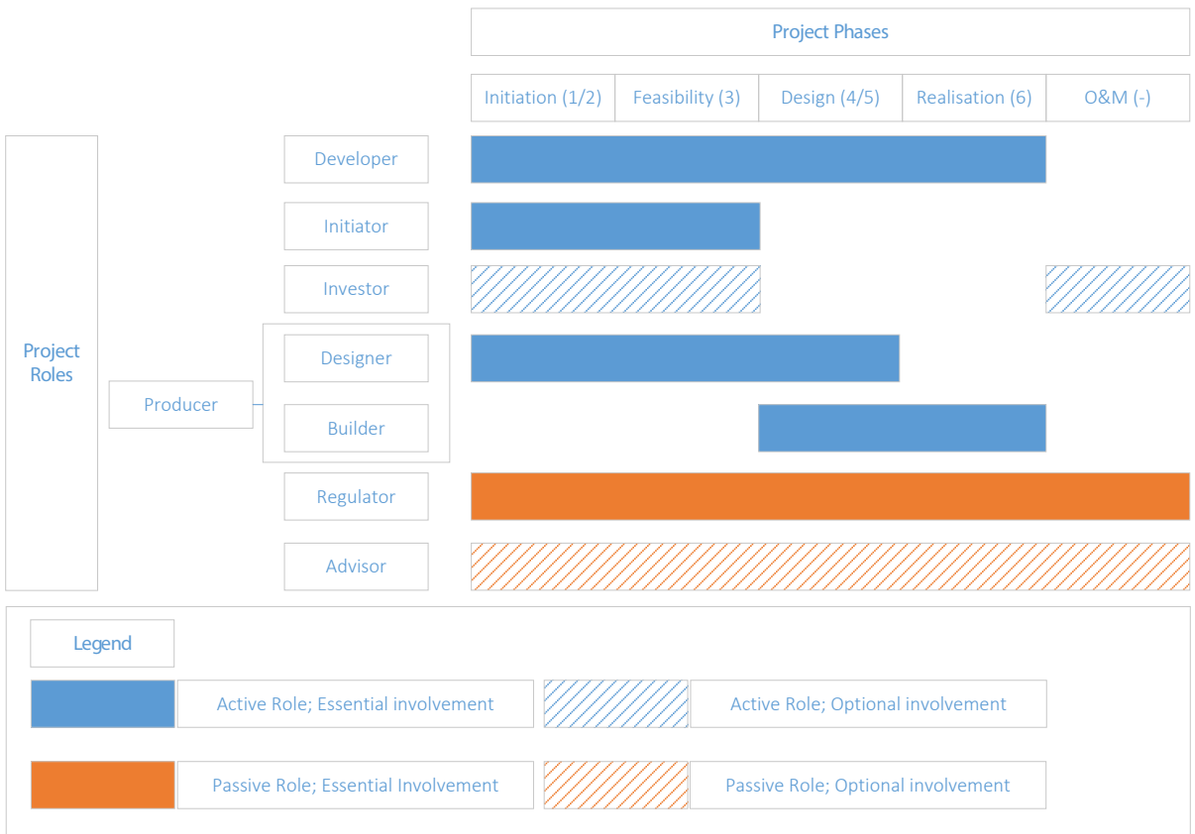

Figure 15: Involvement of Project Roles across Project Phases for Office Conversions; Created by author; Based upon Douglas (2006), Van der Voordt and Geraedts (2007), Van Gool et al. (2007)

Existing literature displays that the following characteristics of project roles in conversion of vacant office could lead to a reconsideration of project roles being beneficial in terms of increasing risk management capabilities and increasing project value.

1. Bearing the development risk should be incorporated into the developer role, but whether or not development and ownership should be combined is inconclusive.
2. Unlike with new-built real estate, a specific initiator role is deemed to be required in order to generate momentum for the project. The initiator role is critical during the early phases of a conversion project in terms of the creation of a feasible business case. No agreement is demonstrable as to which actor is to serve as project initiator and whether or not the initiator role should also be present during the design and realisation phases.
3. Involvement of the investor role limits itself to pre-conversion and post-conversion ownership. These owners do not take part in the actual conversion process. This distance from the conversion process creates the need for interconnections with the initiator role in terms of getting the pre-conversion owner to sell the office building. As well as posing the developer role with the issue of obtaining financial means to cover the development risk.
4. The advisor role is described in literature as providing knowledge towards whoever pays the advisor (usually the project client or –contractor). It is perceived that it is not the content of the advisor role which increases project complexity, but the amount of advisors involved as well as the fact of advisors serving different entities. Increased project complexity in comparison to new built real estate could lead to an increase in the need (and therefore power) of advisors.
5. For the producer role, the importance of early involvement of the designer is clear. The type and moment of involvement of the party (or parties) would has to carry out the actual conversion during relation phase is limited to task of building once the design is complete. This could create hindrance in managing the realisation risks mentioned in paragraph 3.2.1.

5 Project Actors in Office Conversion Projects

The process of converting offices involves a variety of actors, most of which are also present in new built real estate assets. This chapter contains a description of the involvement of the various actors with their objectives and influence across the phases of a conversion project (Initiation, Feasibility, Design, Realisation, Operation and Maintenance).

5.1 Relevant Actors in Office Conversion

Over time, an extensive amount of research has been carried out into the types of actors involved in carrying out office conversions. This paragraph summarizes the existing knowledge.

Two terms which come up often when researching management literature concerning the people and entities which have a role to fulfil within a project are "actor" and "stakeholder". The definition of stakeholder is "All parties who will be affected by or will affect [the organization's] strategy" (P. Nutt & Backoff, 1992). This definition involves all people or entities (parties) which are linked to (in this case) the organisation. This notion can be extrapolated to projects stakeholders, which encompasses all entities (either people or parties) with a measurable relationship to the project (Li, 2007). The term "project actors" on the other hand only encapsulates those people or entities who are contractually bound to the project and have to provide active involvement to a project in order to create the intended outcome (Winch, 2010; Zwikael & Smyrk, 2011). Winch (2010) divides stakeholders and actors into the following categories; internal, external and public. Table 16 contains the important actors in office conversion projects. As per the scope of this research, external stakeholders (who are not contractually bound to the project) have not been taken into account. Research did however show that an exception has to be made for the non-contractually bound actor "Government" with its sub-actors.

Table 16: Internal Project Actors in Conversion Projects (References mentioned in table)

Decisio BV (2006)	***Various Authors in Van der Voordt and Geraedts (2007)***	***Winch (2010)***	***Wamelink (2010)***	***Bullen and Love (2010)***
Office Conversion	*Office Conversion*	*Real Estate Construction*	*Real Estate Construction*	*Office Conversion*
X	Client	Client (Including User/Tenant)	Client	X
Owner: Former User Institutional Investor	X	X	X	X
Real Estate Developer	Real Estate Developer	X	X	Real Estate Developer
X	Architect	Architect	Architect	Architect
X	X	Engineering Firm	Advisory Engineering Firm	X
X	Consultant	X	*Consultants:* Construction Management Consultant	*Consultants:* Property Consultant; Project Manager; Planning; Consultant Cost Consultant
X	Contractor	Contractor	Contractor	X
X	Suppliers	Suppliers	Producers and Suppliers	X
X	Future User/Tenant	X	Future User/Tenant	X
Government: Local Government	*Government:* Regulator	*Governement:* Regulator Local Government National Government	Governement	*Government:* Town Planner
X	Real Estate Broker	X	Real Estate Broker	X
Funder	Institutional Investor	Lender	X	X

Gelinck and Benraad (2011) state that among the actors mentioned in table 16, there are three essential actors in getting an office conversion from feasibility into design and realisation; the pre-conversion owner, the customer (user) and the municipality (local government). This notion is confirmed by Bullen and Love (2010) and leads (in conjunction with the references in table 16) to the following main actors in conversion projects with their respective characteristics.

Asset Actors

Asset Owner (Pre-Conversion)

The owner of an office with is available for conversion is usually a former user or an institutional investor. Existing literature states that the most common strategy for an owner is to sell an asset to a market party who in turn carries the risk for the conversion process with the possibility that the investor buys back the asset after conversion (Remøy, 2010a). The possibility of a former user keeping ownership of an office after conversion is null, due to the transformed asset not being fit for purpose anymore. In this case, the most likely actor to serve as a future owner is a housing association. Which association is allowed to serve as owner is highly region specific in the Dutch market.

Housing Investors and Housing Associations (Post-Conversion Owner)

According to existing literature, post conversion ownership of converted offices can be subdivided into two main actors. Housing investors which focus on specific target groups, with the most common focus groups being student housing and upmarket housing for twin income households (Remøy, 2010a). Housing investors serve as private sector owners and are subject to less strict regulations in terms of generating income through rent capping. Housing corporations have the core task of providing social housing for lower incomes. In general, housing corporations are responsible for around 34% of the ownership of housing in the Netherlands (Remøy, 2010a). In the past, housing associations were allowed to appropriate a developing role for the creation of non-social housing through subsidiary companies. The lower profit objective of housing associations in comparison to that of housing investors allowed for a change of making a project financially feasible. In recent years, under pressure from national regulations, housing corporations have been forced to move away from the risk bearing developing role outside of social housing (Decisio BV, 2006; Westra, 2007).

Future User/Tenant

When changing the function of an asset from office to residential, the amount of future users/tenants goes from a few to many. The consensus is that early involvement of future residential users is desirable to expedite the upfront sale or rent, but it also noted that this would put even more additional strain on the early phases (initiation and feasibility) than is already the case with conversion projects (Kurul, 2007; Vulperhorst, 2009). The current involvement of future users of a converted real asset is perceived to be minimal during the initiative and feasibility phases. This is explained by to the users simply not being contracted at that time as well as a distance between the future users and the project (Ball, 2006; Putman, 2010).

Municipality

Municipalities view office vacancy as an important issue and can take two different courses of action. They can either support the actor which serves as the developer through facilitating the processes of altering the land-use plan as well as obtaining environmental- and construction permits. A second possible involvement is for the municipality to set up a platform to actively push conversion projects. In either case it is deemed unwanted to have a municipality put up funding in order get a conversion project to ahead (Gelinck & Benraad, 2011; Remøy, 2010a).

Project Actors
Besides the before mentioned actors who are involved through direct links to the real estate asset, the following actors are involved in the process of office conversion.

Real Estate Developer
The traditional involvement of real estate developers consists of taking up a client role in the conversion process either in a risk bearing position for the development risk or a combination of development- and market risk. The business model of real estate developers is set up to work "from sale to sale". Aiming to add value between the acquisition from the pre-conversion owner to the sale to the post-conversion owner. This requires the pre-conversion owner to take a substantial part of the financial pain caused by devaluation of the asset prior to the first sale. Decisions made by real estate developers are driven by commercial performance, project cost and project risk (Bullen & Love, 2010). A second manner in which real estate developers are involved in conversion projects is as a fee-developer; this allows the developer to play an independent coordinating role. But it does add another layer of difficulty to the questions who bears the development risk (Bijenveld, 2016).

Architect
The added value of the architect for conversion projects has been researched by Kloek (2015) in her MSc thesis within the context of converting listed buildings with change of function in the Netherlands. Besides the role of creator of the design, it is proposed that the architect should play a more central role in the development process, with an especial emphasis on generating funding possibilities through visualising the possibilities for the converted asset. Another area in which the architect is perceived to be of additional value is in coordinating the design supervision. A second conclusion which is mentioned is the architect playing a coordinating role during the realisation phase of the project, in essence supervising the contractor.

Contractor
Currently available literature describes the tasks of the contractor (main- as well as sub-contractor) as stepping in via budget based tenders once the detailed design is completed and has to be translated into an executional design (UO) (Douglas, 2006; Van der Voordt & Geraedts, 2007). Vulperhorst (2009) and Mosey (2009) do outline that both for general construction projects as well as real estate development, no research has however been carried out into the effects for early contractor involvement in conversion projects in terms of financial feasibility. Even though projects within the Netherlands have been carried out in which the main contractor has been up a leading role starting in the pre-design phases in conversion projects, such as the Wijnhavenkwartier project in The Hague (Heijmans, 2014).

Consultant
Involvement of consultants in real estate development occurs in every phase of the project, with the manner in which consultants are utilised in conversion projects being similar to their involvement in new built real estate projects. Which types of consultant are required for a specific conversion process is fully dependent on the identity of the project client. If the client is the post-conversion owner (investor), all three types of consultants displayed in figure 16 are often required. If the client is a developer, process consultants are often less involved.

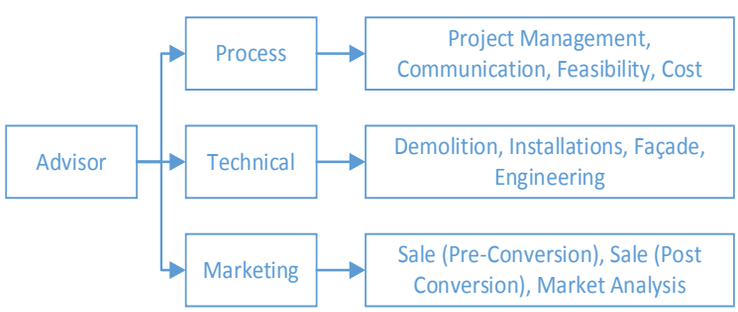

Figure 16: Division of Advisors in Real Estate Projects, Illustration by author based upon Bullen and Love (2010), Bullen (2007), Douglas (2006) and Peiser (2015)

Lender

A lender becomes involved with an office conversion when the owner and developer (which can be the same entity during development) are not able or willing to carry the development risk through using their own financial means. Lenders are responsible for taking up the operational funding during the conversion process, whereas investors can own the asset prior to and/or after conversion but do not take part in the conversion itself. Having the developer use an external lender does not alter the risk allocation profile (development risk remains with the real estate developer), but it can expedite the office conversion process (Winch, 2010). Before 2008, a short term loan from a bank was the most common method of supplementing the equity put forward by the actor taking up the developer role. The percentage of private equity in real estate development used to be around 25% in order to obtain a bank loan (Peiser, 2015). In 2013, a large percentage of debt was put created through forward-funding by either post-conversion owners or provided by the parent company of a developer (Mackaaij, 2015).

5.2 Possible Actor-Role Pairings in Office Conversion Projects

In the first full year after the start of the economic downturn, Vulperhorst (2009) carried out an exploratory research which revolved around the questions; "Which actor is suited to take up which responsibilities in new-built real estate development during times of economic downturn?" Vulperhorst reasons that the souring of the economic climate since 2008 and the subsequent reduction in credit availability warrants a necessity to re-evaluate the project roles concerning real estate development. These recommendations are not tailored to office conversion projects. For the project actors mentioned in paragraph 5.1, Vulperhorst (2009) formulates the following recommendations. It is important to denote that these recommendations are created through observation using scenarios. As a result, these recommendation by themselves cannot make up a role governance model. The recommendations can however be used to provide input into empirical research.

Table 17: Scenario Based Recommendations on Actor-Role Pairings in Real Estate Development (Vulperhorst, 2009)

#	*Actor*	*Recommendation(s) on Actor – Role Pairing*	*Recommended Strategic Actor Interconnections*
1	Real Estate Developer	Developers should invest in their ability to partake in project in a risk bearing manner; Developers should re-evaluate their roles within real estate projects to pinpoint their strongest realm (developer-investor, developer-builder, advisor, process manager)	Contractor Architect
2	Architect	Creative entities such as architecture firms should take up a role in which they use their knowledge on design and function allocation to support the client in the design process. By marketing themselves as binding element; clients, developers and contractors should all benefit. Larger architects should be able to not only take up responsibility for the design related to a project, but also for the realisation.	Client Real Estate Developer Contractor
3	Contractor	Main contractors should view clients and users as co-creators and allow the users to initiate real estate development; Contractors are the most suitable actor to utilise integration of project phases and subsequent construction contacts.	Clients Users
4	Advisor	Overall involvement of advisors is perceived to hamper project performance and the aim should be to carry out real estate construction projects with as little advisor involvement as possible.	-

#	*Actor*	*Recommendation(s) on Actor – Role Pairing*	*Recommended Strategic Actor Interconnections*
5	Lender/Investor	The investor should decide upon whether to employ an active portfolio management strategy or a passive portfolio management strategy. When deciding upon an active management strategy (i.e. become a co-creator), the investor should cooperate with real estate developers on a portfolio level increase risk management capabilities; Institutional investors should not be used to solve a project's financial problems, developers and contractors should be the primary funders of real estate projects.	Real Estate Developer Contractor
6	Government	Local government should be facilitating actively.	-
7	Real Estate Broker	Not mentioned	-
8	Fitter (Installateur)	The market of fitters is divided up by a small number of companies. The high level of expertise present with fitters and the necessity of this expertise makes the fitter	Contractor

For the proposed strategy on activity of real estate developers, the advice to focus on a specific niche within development brings with it a necessity to create a split between risk bearing real estate developers (developer-investor, developer-builder) and fee-developers (advisors, process manager). For this specific type of split, no comments are made on the suitability of tasks between independent developers and real estate developers tied to a contractor or architecture firm.

The suggestions put forward by Vulperhorst (2009) for architects largely correlate with Kloek (2015) and De Back, Coenen, Kuipers, and Röling (2004) in terms of utilising the creative visualisation capabilities of architects to bring actors and stakeholders together during the early phases (initiation and feasibility) of a project. The integration of tasks and responsibilities as recommended to be taken up by contractors requires the contractors in question to increase their exposure to development risk. Whether or contractors have the opportunity to proceed with integration of responsibilities or even the desire to expand on the builder role is to be researched.

5.3 Sub Conclusions Project Actors

Within office conversion projects, the actors who have the strongest influence on whether or not a project is perceived to be financially feasible during the initiation and feasibility phases are the investor (pre-conversion asset owner), the post-conversion owner, the future users and the municipality. With the asset owners and the municipality being able to make or break a project through a reluctance to sell and permit processes respectively.

The second group of actors (the project actors) is the group which is tasked to cooperatively create a solution in order to create a feasible business case for the office conversion. The three actors with the most direct influence on the contents of the business case are the real estate developer, architect and the (main-) contractor. The responsibilities of the architect are clear and revolve around the design and using the design to entice lenders and asset owners (pre- as well as post-conversion) to participate in the project. The most common responsibility of the real estate developer involves taking up the client role whilst carrying full development risk over the course of the project. The role of the contractor within conversion projects has not been elaborated besides the traditional task as a builder. The impact of placing the (main-) contractor in a leading role is suggested by Vulperhorst (2009), but not empirically researched for office conversion projects in the Netherlands.

In terms of possibilities for actors to alter their project roles in office conversion projects, the actors with the highest suitability appear to be real estate developers, the architect and the (main-) contractor. The project characteristics which have the strongest emphasis on the feasibility of the conversion project are the ability to bear development risk, the ability of the actor to entice a sale from the pre-conversion owner and the involvement of the tenant/user of the post-conversion asset.

6 Governance of Project Roles

Project governance describes the manner in which actors are contractually bound to the project and to one another in order to work towards the predetermined project goals. Rhodes (1997, p. 53) states that "governance refers to self-organizing, inter organisation network". This definition encompasses the notion that governance requires actors to agree among themselves in which manner the project is organised. This chapter contains an overview of the views in existing literature on the manner in which collaboration between project actors in office conversion projects could be governed.

Turner (2004) states that a need for governance of roles for unique project stems from the inherent incompletion of contracts and should cater for the following.
Make mutually agreed adaptations in the contract to meet unforeseen variations.
Communicate with each other to identify such variations, and agree the required adaptations to the contract.

Within the context of office conversion, the following elements of project governance will be discussed below.

1. General theory on governance of multidisciplinary construction projects.
2. Project governance of office conversion project based upon project characteristics.
3. Possible forms of collaboration and subsequent required roles across project phases.
4. Performance assessment of a project related to project roles and actors.

6.1 General Project Governance

Within their publication on governance and roles, Van Kersbergen and Van Waarden (2004) have compiled a total of nine different approaches to project governance. Within the confines of office conversion projects, a governance approach based around a fully-private or limited public-private network of governance can be subdivided into three main types; Market, Hierarchy and Network (Van Kersbergen & Van Waarden, 2004).

In the realm of a specific construction project, De Bruin, Ten Heuvelhof, and In 't Veld (2010) described the governance forms Hierarchy and Network as the most prevalent and assign the following characteristics to the governance methods for project goals from

Table 18: Hierarchical and horizontal management (De Bruin et al., 2010), Elements in bold added by author for clarification

	Hierarchy	*Networks*
Interrelations	Dependence on superior **(within the same actor)**	Interdependence
Variety	Uniformity **(of actors)**	Pluralism **(of actors)**
Goal Orientation	Openness **(of actors towards one another)**	Closedness **(Dutch term: Geslotenheid) (of actors towards one another)**
Characteristics Across Project Phases	Stability, Predictability	Dynamic, Unpredictability

Exerting project governance through stakeholder management is described as a long-term process which requires a large amount trust among stakeholders (including project actors) in order to be able to achieve cooperative problem solving (Carter, 2006; Stoney & Winstanley, 2001). With office space conversion usually being (see paragraph 3.1) short and concise projects in comparison to new-built real estate, building said trust from zero over the course of the project is perceived to be difficult. Rowlinson and Cheung (2008) confirm this and add a specific provision for the relationship between client and contracting party (not to be confused with the contractor). They state that the "process of engaging pluralistic clients needs careful management and cannot be handled in an ad hoc fashion." (Rowlinson & Cheung, 2008, p. 612).

6.2 Role Governance and Forms of Collaboration in Office Conversion Projects

Governance of project roles starts with the characteristics of the project (Nicholas & Steyn, 2012, p. 479), which are critical in deciding which type of project governance structure is to be implemented for a construction project. Figure 17 contains one manner of assessing the applicability of project organisation structure based upon complexity, size, duration and occurrence of the type of project. Besides the general characteristics of a project, Kurul (2007) outlined the following main drivers for allocation of roles and role governance in conversion projects.

Table 19: Drivers for role allocation and project governance in conversion projects (Kurul, 2007), Elements in bold added by author

Number of	*Determined by*
Agents **(actors)** involved in each state **(project phase)**	The developer group **(project developer, architect, contractor, advisors)**
Activities agents have undertaken	The developer group **(project developer, architect, contractor, advisors)**
Issues have taken into consideration	Site and building characteristics **(Pre-conversion)**
Reiterations that occurred in each stage	The gap between the developer group's and the statutory bodies' objectives

Elaborating on these drivers, Kurul (2007) describes the risk strategy (transferring or managing) of the developer group (no distinction made between actors in group) as having the strongest impact on project performance and development of complexity across project phases. Besides this, the larger amount of iterations (during the initiation and feasibility phases) up until receiving planning permission in conversion projects has a stronger bearing on role allocation and increases the need for a separate initiator role.

As mentioned in paragraph 3.1, the characteristics of office conversion projects on these criteria can be generally described as follows.

- **Complexity**: Medium to High (Kurul, 2007)
- **Size**: Small to Medium (Douglas, 2006)
- **Occurrence**: Increasing frequency, each project has to be started from zero (DTZ Zadelhoff, 2015d; Dynamis, 2016)
- **Duration**: Long run up (initiation, feasibility and design phase), short realisation phase (Douglas, 2006; Peiser, 2015; Van der Voordt & Geraedts, 2007)

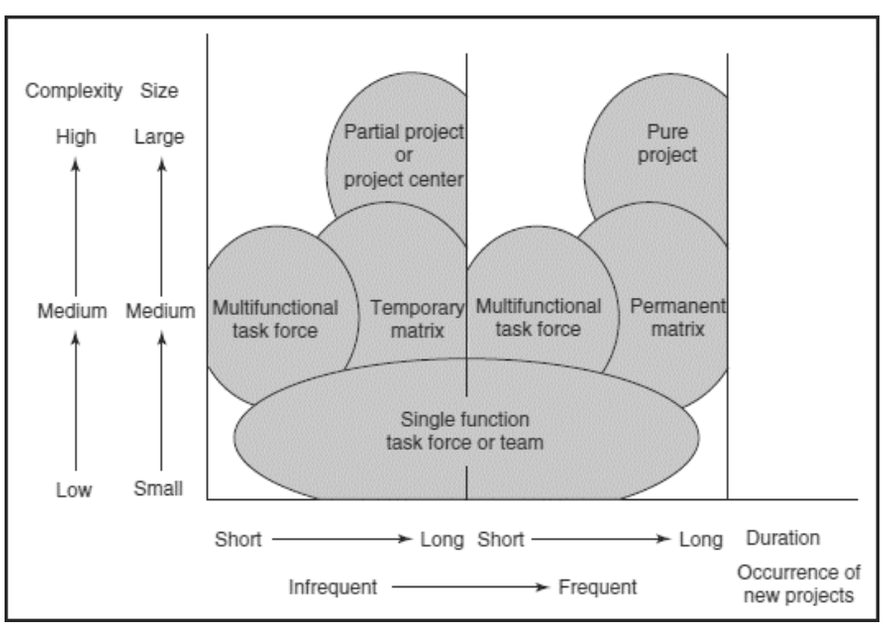

Figure 17: Criteria for Selecting the Appropriate Project Organisation Form (Nicholas & Steyn, 2012, p. 476)

This combination of factors makes office conversion projects difficult to positon in the governance spectrum when carrying out an assessment solely based upon literature. Ball (2006) confirms the need for organising real estate projects realisation in a multifunctional structure, but does not make a differentiation between new- built projects and redevelopment project in which the spike in project complexity is situated earlier than with comparable new-built projects.

6.2.1 Forms of Collaboration

De Ridder (2009) describes the following main forms of project governance as common practise for Dutch construction projects in relation to the division of project roles. Involvement of actors and roles during operation and maintenance phases was not included in the publication. For office conversion projects, the position of project client can be assumed as being incorporated in either the investor role (for projects with high feasibility) or the developer role (for all levels of predicted feasibility) (Van Gool et al., 2007; Van Kranenburg, 2011).

Table 20: Forms of project collaboration in the Dutch construction industry (De Ridder (2009) and Chao-Duivis et al. (2013))

	Standardised Administrative Conditions	*Role Involvement*		
		Initiation/Feasibility	*Design*	*Realisation*
Design-Bid-Build (DBB)	UAC2012 (Construction); DNR2011 (Consultant)	Client	Design Advisor to Client	Contractor
Design and Build (D&B) (Dutch: Design and Construct; D&C)	UAC-IC2005 (Design and Realisation); DNR2011 (Consultant)	Client; Design Advisor to Client	Contractor; Design Advisor to Client	Contractor
Build-Operate-Transfer (BOT)	UAC2012 (”); UAC-IC2005 (”); DNR2011 (”)	Client; Concessionaire	Concessionaire	Concessionaire
Design Team/ Building Team	-	Client; Design Advisor to Client; Contractor;	Client; Design Advisor to Client; Contractor;	Client; Design Advisor to Client; Contractor;

For a total of 9 project cases described in Van der Voordt and Geraedts (2007), 6 projects involved a Design-Bid-Build governance structure in which client bears development risk and is responsible for project supervision. A Building Team was implemented in 2 cases and a Design and Build structure in just one case. This relatively small sample does not provide conclusions by itself, but it does outline that involvement of main- as well as sub-contractors during the initiation and feasibility phases appears to be fairly uncommon. With these phases being generally perceived as the most critical during office conversion, this could increase project complexity during realisation (De Ridder, 2009).

6.2.2 Liability in Administrative Conditions

An important characteristic when assessing the possibilities of altering the project governance structure by which actors who consider adopting a change in role and tasks is liability. With tasks possibly allocated to actors who are unfamiliar in working with the liability clauses in question. Under the three standardised administrative conditions mentioned in table 20, liability is contractually linked to the allocation of development risk for office conversion projects.

6.2.2.1 De Nieuwe Regeling 2011 (DNR2011)

Under De Nieuwe Regeling 2011 (DNR2011), liability for the contracting party (the consultant) is demarcated in section 6 of the English language publication. The clauses in DNR2011 are characterised by limited liability for the contracting party (often filling the role of architect or advisor) is linked the consultancy costs (§13 and §15).

DNR2011 – Revision 2013 – English Version (Various Authors, 2013)
§13 (1)
The consultant is liable towards the client for his culpable fault. Insofar as for culpable shortcomings compliance is not already permanently impossible, this clause is only applicable while taking into consideration the legal regulations with respect to neglect by the debtor.
§15 (1)
The damage to be compensated by the consultant is, at the choice of the parties, limited per commission to a sum equal to the consultancy costs with a maximum of € 1,000,000 or limited to a sum equal to three times the consultancy costs with a maximum of € 2,500,000.
§15 (2)
If the parties did not make a choice about the scope of the damages to be refunded by the consultant, then this shall be limited per commission to a sum equal to the consultancy costs with a maximum of € 1,000,000.

6.2.2.2 Uniform Administrative Conditions 2012 (UAC2012) (Also applicable to UAC1989)

Similar to the liability structure under DNR2011, the conditions under UAC2012 are characterised by limited liability being allocated to the contracting party (in the case of the UAV2012 this would be the builder role). Within the UAC2012, the project client; which for an office conversion under the traditional division of roles is the same as the developer role, is accountable for delivering the design. This role also encompasses contracting the advisors required (often under DNR2011) to deliver the design to the actor filling the builder role. This means that the actor filing the developer role bears direct liability for all but the realisation phase.

UAC2012 – English Version (Chao-Duivis et al., 2013; Unknown, 2012)
§5 (2)
The client is responsible for the constructions and methods prescribed by him or his behalf, including the effect upon them of soil conditions, and for order and instructions by him or on his behalf.

The liability of the builder role under the UAC2012 is outlined through the obligations in paragraph 6 and encompasses that the builder role is responsible for completion of the work on time according to the specified design (UAC2012 - §6 (2)). An especially pertinent clause in relation to office conversion is that the actor taken up the builder role is liable for obtainment of permits, licenses, exemptions and order required related to the work (UAC2012 - §6 (14)). Even though the playing field of public law does not fit within the scope of this research, the allocation of permits (including change of land-use plan and construction permits) to the builder role under UAC2012 does limit the flexibility of the division of project roles and tasks on this matter.

As for liability following completion, the actor filling the builder role is by definition not liable for defects appointed after acceptance of the work (either by the client or a representative of the client) (UAC2012 - §12 (2)). The assessment criteria for exceptions to §12 (1) are set out in §12 (2). Unlike when the DNR2011 is declared applicable, UAC2012 does not include a monetary cap on liability. Each occurrence has to be assessed separately.

UAC2012 – English Version (Chao-Duivis et al., 2013; Unknown, 2012)
§12 (1)
After the day upon which the work in accordance with §10, clauses 1 and 2 is accepted by the client, the contractor is no longer liable for shortcomings related to the work.
§12 (2)
(1) shall not apply if there is a defect:
(a) that is the responsibility of the contractor and
(b) that moreover, in spite of careful supervision during execution or on inspection of the works as referred to at §9 (2), could not reasonably have been detected by the clerk of the works and of which
(c) the contractor has been notified within a reasonable period following its discovery.

6.2.2.3 Uniform Administrative Conditions for Integrated Construction Contracts 2005 (UAC-IC2005)

When utilising the UAC-IC2005 (for instance under a Design and Build structure) to govern a construction project, the liability for the full design and realisation works is allocated to the actor filling the builder role (UAC-IC2005 §4 (1)) (Chao-Duivis et al., 2013; Rijksoverheid, 2005). This would entail that the development risk for the project client is reduced, but subsequently the level of control over the project decreases accordingly. When the client wishes to exert control under UAC-IC2005 in terms of the design and realisation phases, this would entail an additional need for project governance outside of the set contract.

Liability of the client (i.e. the developer role) under UAC-IC2005 is not defined by direct clauses and has to be based upon Book 6 of Dutch Civil Code (DCC). Unlike under UAC2012, allocation of permits and licenses is not automatically allocated to the contractor. UAC-IC2005 §6 (1) states that an allocation of who bears responsibility (and subsequently liability) for obtaining which permits has to be appended to the basic contract. This creates larger flexibility when it comes addressing any public law related matters concerning office conversions. Similar to governance under UAC2012, the principle under which liability for the combined role of designer and builder (UAC-IC2005) is such that the actor filling this role is no longer liable after acceptance of the work by the client (or a representative of the client). UAC-IC2005 §28 (1) does outline three cumulative criteria which all have to be met for liability to be allocated to the actor filling the designer and builder role. Unlike UAC2012, the liability is capped at 10% of the price stated in the basic contract or a maximum of €1,500,000 (UAC-IC2005 §28 (3)) in a system similar to the DNR2011.

6.2.2.4 Uniform Administrative Conditions and the Dutch Proportionality Guide

The administrative conditions UAC1989(2012) and UAC-IC2005 are reviewed and accepted into practice by clients and contractors operating in the Dutch construction industry after wide consultation. The DNR2011 conditions are unilaterally drafted and subsequently reviewed by a selection of main project clients. Due to the division in liability between being perceived as a touchy topic, it is further reviewed and stipulated in the Dutch Proportionality Guide for tender legislation (Gids Proportionaliteit, 2016). The Dutch Proportionality Guide is applicable to UAC1989(2012) and UAC-IC2005 conditions and does not directly pertain to DNR2011 conditions The position is such that, unless a project client (issuing a tender procedure) mentions in writing that no uniform administrative conditions are applicable to the tender procedure, it has to obey to both the conditions in questions as well as to the Dutch Proportionality Guide. The guideline is written against the backdrop of the uniform administrative conditions UAC1989(2012) and UAC-IC2005. But since the introduction to the guideline mentions applicability to uniform conditions in general, it could also be appropriate for use in assessing proportionality of liability under DNR2011 conditions. . Applicability of proportionality conditions under DNR2011 is to be judged by article 6.233 BW et seq (Dutch Civil Code) as to whether or not the use of DNR2011 uniform administrative conditions are deemed reasonable.

When a contract form which is drafted in accordance with the model founded in either the UAC1989(2012) or the UAC-IC2005 , the respective liability structure has to be used. It is stipulated that liability should be tested against the risk run by the client and the liability which is customary in the construction industry (Gids Proportionaliteit, 2016, Article 3.9D, par. 2), which can be the limited liability under DNR2011 conditions. A general condition is that unlimited liability in the sense of time is never deemed proportionate (Gids Proportionaliteit, 2016, Article 3.9D, par. 1). Under no uniform administrative condition (UAC, UAC-IC or DNR), unlimited liability is present, so this should not be a point of contention. Paragraph 2 of article 3.9D has to be assessed for each individual case.

Gids Proportionaliteit (2016)
Voorschrift 3.9 D

1. *De aanbestedende dienst verlangt geen aansprakelijkheid die op geen enkele manier gelimiteerd is.*
2. *Bij de beoordeling welke limitering van de aansprakelijkheid proportioneel is slaat de aanbestedende dienst in ieder geval acht op:*
   - *de risico's die de aanbestedende dienst daadwerkelijk loopt;*
   - *de gebruikelijke aansprakelijkheidseis in de betreffende branche of voor de betreffende opdracht naar aard en omvang.*

6.2.2.5 Administrative Conditions in Relation to Project Roles

Any change to the allocation of risk and liability will have a bearing on which type of administrative conditions used to contract out specific tasks (be at as a consultant, be at as a contractor). Within the empirical research, it has to be explored which administrative conditions are currently used whom to govern which tasks. Besides, it is necessary to map the tasks for which actors are willing to incorporate increased liability for office conversion projects. The use of administrative conditions in office conversion projects is described in table 21 and contains the conditions used to govern the tasks and risks allocated to the project roles.

Table 21: Project Roles and Administrative Conditions (Own table based upon paragraph 6.2.2)

Project Role (From Table 15)		*Administrative Conditions*	*Client*	*Delegated Client*
Developer UAC2012 UAC-IC2005		DNR2011	No	Yes
		UAC2012	Yes	No
		UAC-IC2005	Yes	No
Initiator		-	N/a	N/a
Investor		N/a (Sales Transaction)	N/a	N/a
Advisor		DNR2011	No	No
Producer	Designer	DNR2011	No	No
	Builder	UAC2012	No	Yes
		UAC-IC2005	Yes	No
Regulator		-	No	No

6.3 Effects of Office Conversion Characteristics on Project Governance

Besides the form of project collaboration used to govern the project structure, the type of reimbursement structure implemented for a project also has a bearing on governance of the project. De Ridder (2009) as well as Müller and Turner (2005) outline five reimbursement schemes; Fixed price, Fixed price plus incentive, Cost plus incentive, Cost plus fixed reward and Cost plus percentage reward. The criteria for choosing a scheme are as follows (Ball, 2006; De Ridder, 2009; Miller & Lessard, 2001; Müller & Turner, 2005).

1. The level of control/supervision required by the actor who is responsible for payment.
2. Project information available at the start of the project (based upon form of collaboration).
3. The level of project information required for project supervision (dependant on outsourcing)
4. The allocation of marketing- and development risk. These two types of risk can be allocated based upon three different principles.
    a. Risk borne by the entity which possesses superior information related to the risk.
    b. Risk borne by the entity which has the largest influence over the outcome when the risk fires.
    c. Risk borne by the entity which is best able to diversify the risk through a portfolio.
5. Complexity of the project activities.
6. Expected alterations to project activities over the course of the project (uncertainty).

On the project governance of real estate construction projects (new built as well as conversion/adaption), Ball (2006) and Bregman (2010) outline the following aspects as having the most prevalent effect on performance for short duration, high complexity projects in which preferred supplier ship does not play a dominant role.

- The level of detail in the construction contracts between the client and the creator/builder (ranging from detailed instruction (Dutch term: bestek) to functional specifications in a turnkey manner).
- The level of pay-off related to opportunistic behaviour and the manner in which opportunism during the early phases effects the design and realisation phases.
- The source of project finance and the subsequent actor power resulting from this allocation.
- The amount of external specialists (consultants) which are involved with the project.
- The type of actor which serves as project manager (real estate developer, architect or contractor) and the corresponding allocation of market- and development risk.
- The level of outsourcing and subsequent willingness to take up project risk. Concession agreements (with outsourcing) offer a larger possibility for profit paired to larger development and marketing risk. A joint venture between private parties allows for smaller project risk paired with smaller profits.

When assessing a governance structure for conversion projects in the UK in which public and private entities come together within a partnership structure, the following positive and negative consequences are described by Ball (2006). The actors mentioned are those who perceive the corresponding positive or negative effect. The general outcome is that in urban regeneration (real estate) projects, implementing a partnership of public and private actors generally results in better outcome of the project, especially concerning the ability to win tenders and acquire assets and land for redevelopment (Ball, Le Ny, & Maginn, 2003). When comparing positive and negative effects, the positive effects are perceived to largely offset by the negative effects caused by increased bureaucracy. The most common issues related to project governance in real estate partnership projects and building teams are bureaucracy, too much power situated at the municipalities, a lack of leadership and initiation, a lack of sharing and trust and overruns in time and cost (Ball et al., 2003).

Table 22: Pros and cons of implementing a partnership structure in urban regeneration with asset redevelopment (Ball, 2006), Elements in bold added for clarification

Positive		*Negative*	
Effect	*Perceived by*	*Effect*	*Perceived by*
Wide group of (**multi-disciplinary**) stakeholders	Municipality	Time/cost overruns **(reduced efficiency)**	Municipality Housing corporation Property consultant Property developer
Positive community **(tenant/user)** involvement	Housing corporation	Lack of trust **(between actors)**	Municipality Housing corporation Property consultant Property developer
Mobilises resources	Municipality	Excessive bureaucracy	Housing corporation Property consultant Property developer
Discovers what people want	Municipality	Lack of commitment **(in early project phases)**	Housing corporation

Within office conversion projects, municipalities tend to take up much more of a facilitating stance than in urban regeneration projects (Douglas, 2006), which is perceived to reduce project governance issues and bureaucracy in property led urban generation (Ball et al., 2003). This would result in a partnership structure which would only consist of private parties, similar to a building team. However, the heterogeneity and differences in project prerogatives, along with changing goals across preparation and realisation phases remains (Ball et al., 2003).

6.4 Performance Assessment in a Project Structure

Over the course of researching the activity clusters and project roles related to conversion of vacant office space, a tension between three different prerogatives came up. On the one hand, there appears to be role cluster which is primarily focussed on the measurable financial gain (Return on Investment, (Haynes & Nunnington, 2010)) which is to be created from adapting an asset (Gelinck & Benraad, 2011), this group contains the roles investor and funder. The second cluster of roles is also most closely related to financial performance, but in this case the project budget; the developer and the producer (builder) (Ball et al., 2003). The third cluster of roles contains those who aim to safeguard the delivered quality of the project; the roles initiator, producer (designer), user and regulator. This distinction boils down to differences in perception of project success (De Ridder, 2009, 2013). Determining whether or not a project is deemed to be a success is not as clear cut as it may seem. Success is a combination of measurable success and perception of success. Measurable success can be split up into the traditional project triangle (time, cost and quality) with the factor cost being in turn divided into creation costs (stichtingskosten) and transaction costs (Geltner et al., 2010; N. Nozeman, 2010). Transaction costs are all costs that have to be made to reach an agreement and creation costs are all expenses which have to be made after the construction agreement is signed. Relevance of transaction costs in real estate transactions for both developers as well as investor is relatively high in comparison to other types of transactions due to high asset specificity. As described earlier, conversion project often require two ownership transaction per project (pre-conversion sale and post-conversion sale), which would result in a further increase of transaction costs due to different parties being involved with the two transactions (N. Nozeman, 2010).

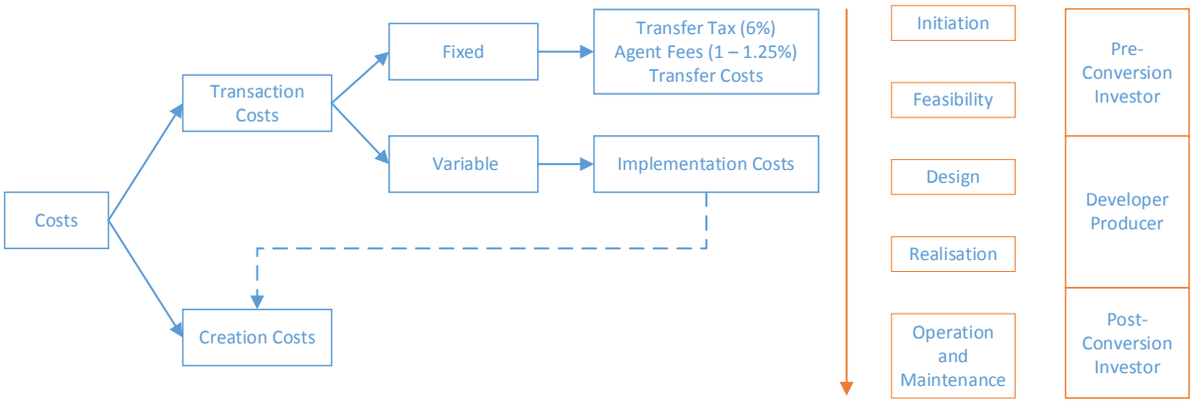

Figure 18: Project Costs for Real Estate Projects, Own Illustration based on N. Nozeman (2010), De Wit (1992), Geltner et al. (2010), Den Butter (2009) and Douglas (2006)

The predicted perception of success by (internal) actors and (external) stakeholders can have an effect on whether or not an asset conversion will go ahead with a particular project governance structure with distinctive actors filling a role during different phases of the project.

The publication by Kurul (2007) noted the possibility for using different role allocation depending on the type of criteria used to steer the project; Time, Cost and Quality. Consensus (De Ridder, 2013; Nicholas & Steyn, 2012) on measuring performance of a construction project revolves around assessing the three main axes of the project triangle; Time, Cost and Quality. The first two criteria can be measured easily through upkeep of the planning and budget. The latter of the three (quality) is more difficult (Zwikael & Smyrk, 2011). Soeter et al. (2011) describe the suitability of using the traditional project triangle in order to assess (conversion) real estate construction projects. The only deviation these authors make from the traditional division is to replace the term "Time" with "Client Orientation". The reasoning behind this shift is that real estate creation since the economic downturn of 2007/2008 has become a "low or zero investment market" and that the wishes of the client should take centre stage in order to increase the amount of projects which move from the concept phase into actual realisation. Whether or not "Client Orientation" surpasses "Time" in significance during real-life (conversion) projects is not mentioned by the authors.

The first distinction is between the quality of the delivered project, which in the case of this research will be a redeveloped office building, and the process which encompasses the project activities which will lead to the creation of the real estate asset in question. Quality can be defined in several manners, the most commonly used manner being a check of the delivered project against the predetermined demands (in case of functional output specifications) or the building specifications (Dutch term: bestek) (Chao-Duivis, 2013; De Ridder, 2009). A second manner to assess the delivered "fitness for purpose" (Van Gunsteren, 2011), which is aimed at the validation of the asset against general conditions as well as internal actor (and outside research scope: external stakeholder) satisfaction. Using the method of checking the specifications of the product is more easily manageable due to each point of assessment being a pass/fail question. With the follow-up questions of "what to do next?" being the difficult part. Within Dutch office conversion projects, this method is the most widely used for quality assurance. Building specifications provide stronger footholds for responsibility and accountability (see figure 14) for role governance and allow for assessing quality in similar manner to time (through planning) and cost (through budget) (De Ridder, 2009).

Within a construction project, regardless of the form of project governance which is implemented, one of the three assessment criteria is always leading. This has effect on the type of project governance as division of project roles within a conversion project. Real estate developers and contractors are mostly cost oriented, with architects and future tenants/users being more likely to steer towards quality. As mentioned before (Ball, 2006; Mackintosh, 1992), the distinction in type of project governance for a value (quality) steered project differs from the governance required for a time steered project.

6.5 Sub Conclusions Project Governance

Governance of project roles encompasses the manner in which project actors fill project roles in order to distinguish and allocate responsibility and accountability. During the initiation and feasibility phase, role governance is influenced by the willingness of actors to incorporate project risk (development and/ or marketing) into their role and the amount of iterations (and therefore communications) required. Role governance during the design- and realisation phases is dominated by the actor taking up the developer role and the manner in which this actor can directly influence the contents of the development risk.
For conversion projects, the following aspects are described in literature as directly influencing the governance of project roles.

- Form of collaboration and administrative conditions used
- Project risk (development and marketing), in which allocation and management is perceived to have a stronger influence than the content of the risks
- Direct (via investor, developer or parent-company) or indirect (via external funders) project finance
- Level of transaction costs in relation to creation costs
- Development of project complexity across phases
- Type of factor (time, cost, quality) which is leading in performance assessment

The interconnections between project roles in terms of project governance across project phases are described in figure 19. Within this figure, both the public- as well as private law governed interconnections are taken into account. For the empirical research, only the private law governed interconnection between the roles developer, designer and builder will be directly researched.

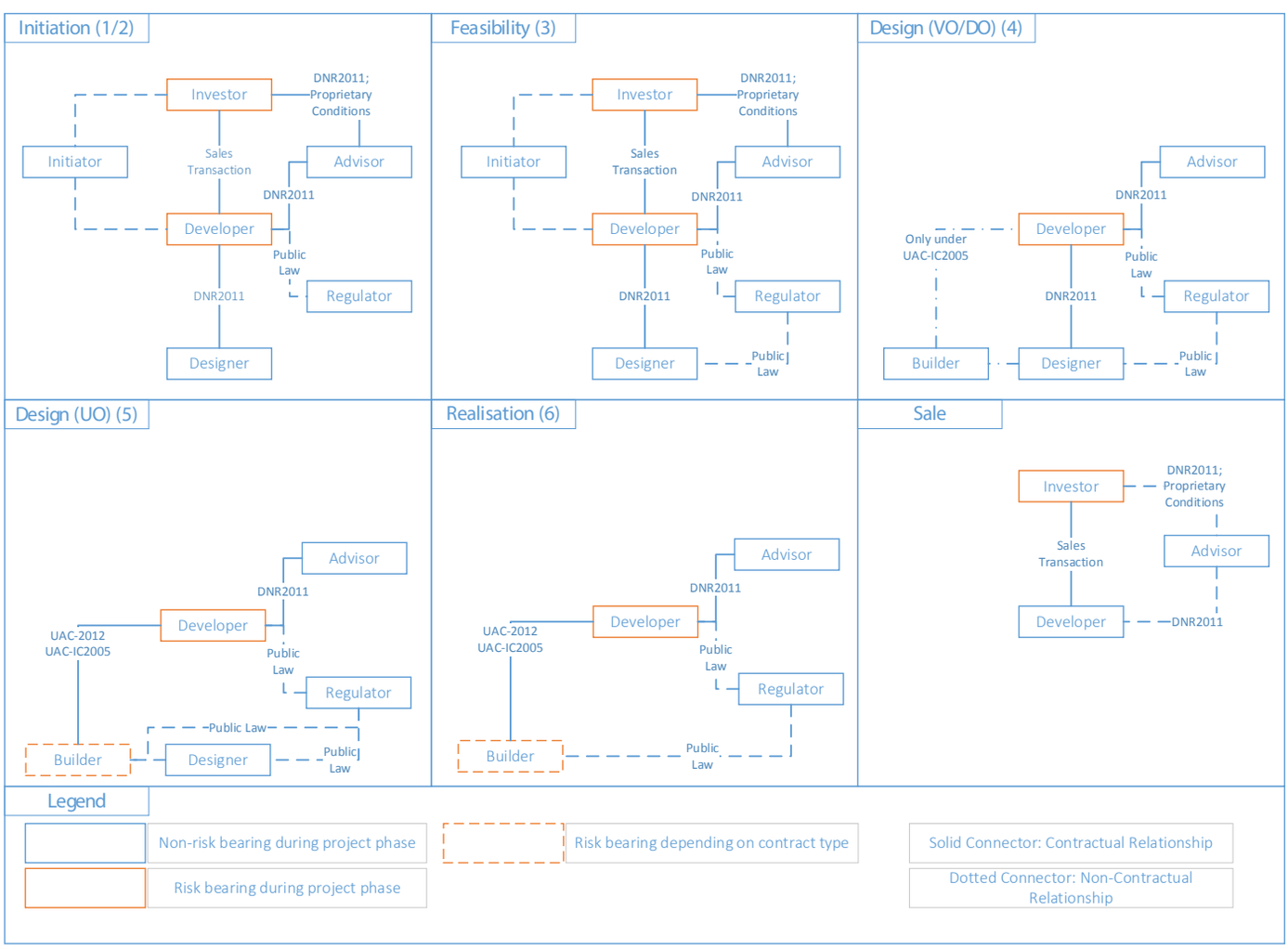

Figure 19: Project Governance Interconnections for Office Conversion Projects; Created by author; Based upon Chao-Duivis et al. (2013), Ball (2006), Douglas (2006) and Van der Voordt and Geraedts (2007)

7 Outcome and Conclusions Literature Study

The aim of the literature study was to describe the tensions between project roles for office conversions as well as the current project structure in which office conversions have been carried out in the past.

7.1 Sub Questions Literature Study

Sub question 1: Which activities and corresponding project roles have to be carried out in an office conversion project?

Office conversion projects cover the same project phases as new built projects; **initiation, feasibility, design, realisation, operation and maintenance (1-6)**. The manner in which complexity and need for cooperation between actors are situated do differ. Office conversion project require increased effort during initiation and feasibility phases in terms of cooperation between the roles developer, designer, regulator and investor.

Project risk can be divided into development risk and marketing risk (12/13). Conversion projects differ from new built real estate developments in the sense that conversion projects often require two ownership transactions in comparison to one transaction (combined land plot plus future asset ownership) for new built real estate.

Project roles in office conversion projects are; developer, initiator, investor, advisor, producer (creative and builder) and regulator. The allocation of the roles developer, initiator and producer has the largest influence on feasibility of the project through creation of value amongst the active project roles. The project roles developer, initiator and builder are the most likely to be suitable for a re-evaluation in order to increase project feasibility. Besides this, the project role regulator does have a significant influence on feasibility, but this role is passive rather than active.

For the hypothesis, Risk allocation results into two possible central hub roles in offices conversions, fully risk bearing or fee-developer, literature states that the developer role by definition has to involve taking up project risk. If the central role were to lack project risk, this role would become an agent to the client.

Sub question 2: Which project governance structures and risk-/liability allocation are in common use for office conversion projects since 2008?

Project governance in office conversion is an effort between private (market) actors in which government plays a less active role through land ownership. The need for **additional permits (7/8**) does allow public entities more possibilities for resistance on a project by project basis. Unlike with new built real estate projects, which are more often resisted through a municipal construction hold. The most common form of collaboration in office conversion projects in the Netherlands is Design-Bid-Build. Turnkey structures such as Design and Build, Design-/Building team and collaboration with outsourcing of the project finance component by the client occurs less.

Early involvement of architects through a design team structure is practised in order to create a viable business case. On the contrary, early involvement of contractors (main- and sub-) is not common and realisation risks could therefore be difficult to pre-emptively manage during initiation and feasibility. The following characteristics inform the type of governance structure for office conversion projects in relation to project roles.

- **Allocation of project risk in relation to source of funding and the allocation of liability (12/13/14)**
- **Power of funder/investor: source of funding; either direct from developer or through indirect structure (15/16).**
- **Ratio transaction costs versus creation costs (15)**
- Leading type of performance measurement (time, cost, quality)

The hypothesis; The type of market party which fills the central hub role does not directly affect the most suitable form of collaboration used to govern an office conversion project, cannot be confirmed or rejected based upon literature alone. This requires empirical research.

Sub question 4: Which project role based factors have an impact on the (financial) feasibility of Dutch office conversion projects?

Financial feasibility for office conversion projects hinges around willingness by the owner of the original asset to either facilitate conversion through keeping ownership or to sell and accept making a loss. An early definition of role and risk can assist pre-conversion asset owners (investors) in mapping possibilities for conversion. For each of the defined project roles, the following factors have an impact on feasibility of conversion projects according to literature.

1. **Demarcation and allocation of development risk and marketing risk (11/12),** with an especial focus on allocation of development risk during realisation.
2. **The level of transactions costs during the initiation and feasibility phase and the perception of the transaction costs by the actors in the developer and initiator role (15)**
3. The manner in which realisation elements are considered during the design phase. **This is given by the interaction between the designer role and the builder role and possesses a link to the form of collaboration which is decided upon as well as the project management allocation (9/10/11).**
4. **The manner in which the development is funded (15/16)**, either through parent company of the developer (developing builder) or through external loans provide different

Whether or not the hypothesis; Using a risk allocation based upon competencies could improve project performance, is valid or not can't be stated as of yet. But it appears that risk allocation for office conversion has to be split into development risk and marketing risk. This does however not mean that the risk allocation for the two has to be split between different roles and/or actors.

7.2 Literature Based Model for Role Allocation and Governance

Table 23 provides an overview of the tasks and involvement corresponding to the active project roles according to literature. The X marks represent tasks which could be allocated under the respective project role, depending on the distinctive requirements of the project in terms of technical complexity, location and the involvement of the passive role "Regulator". The role "Advisor" has been purposely omitted from the overview due to the fact that this role can be linked to each of the 16 characteristics, but never to more than one characteristic per actor. Besides, an actor serving as an advisor will always carry his tasks (and corresponding accountability) as an agent to one of the five active roles mentioned in figure 15. **The numbers of the characteristics correspond with those mentioned in the answers to the sub questions.**

Table 23: Relevant Characteristics for Allocation of Active Project Role and Role Governance in Office Conversion Projects (Own table based, upon table 8, figure 15 and figure 19)

#	*Cluster*	*Sub Cluster*	*Realm*	*Description*	*Developer*	*Initiator*	*Designer*	*Builder*	*Investor*
1	Project Phases	N/a	N/a	Initiation (Project Brief)	X	X	X		X
2				Initiation (Role Allocation)	X	X			
3				Feasibility study	X		X		X
4				Design (Preliminary Design/ Detailed Design)			X		
5				Design (Executional Design)			X	X	
6				Realisation				X	

#	*Cluster*	*Sub Cluster*	*Realm*	*Description*	*Developer*	*Initiator*	*Designer*	*Builder*	*Investor*
7	Project Governance	Regulatory Requirements	Public Law	Change land-use plan	X	X	X		
8				Building permits	X		X	X	
9		Collaboration and Supervision	Private Law	Project management	X		X	X	
10				On-site supervision			X	X	
11				Contracting of out-sourced activities	X			X	
12		Risk Allocation and Liability		Allocation of development risk	X			X	X
13				Allocation of marketing risk	X				X
14				Liability (dependant on administrative conditions)	X		X	X	
15		Finance		Funding for development	X				X
16				Funding for sales transactions	X				X

Section C: Empirical Research

8 Methodology Empirical Research

In order to be able to assess the validity of the theoretical framework displayed in paragraph 7.2, empirical research has been carried out. The nature of this research is exploratory in terms of the current- and future role allocation in office conversion projects. It is more important to incorporate perceptions on the manner in which market actors view not only their own tasks, risk allocation and liability structure, but also the perception of collaboration with other actors during office conversion projects. The most suitable research method for obtaining data from people's perceptions and experiences is the expert interview.

The following appendices are related to the empirical research.

- C1: Interview Protocol Version 1
- C2: Interview Protocol Version 2
- C3: Checklist Literature versus Practice
- C4: Overview Interview Participants (Restricted Access)
- C5: Transcripts Participants (Restricted Access)
- C6: Thematic Summaries Interview Clusters (Restricted Access)

Table 24 describes the clustering of the literature based knowledge. Cluster 1 contains the actors which are to be incorporated as direct data. The series of interviews focusses on the perception of real estate developers, architects and contractors in the division of project roles in office conversion projects. Cluster 2 contains the main topics which are to be included in the interview protocol (interview protocols are located in appendices C1 and C2). Clusters 3 and 4 contain the governance topics described in the literature study and their division into public- and private law. These clusters are incorporated into the validation checklist (Appendix C3: Checklist Literature versus Practice).

Table 24: Framework from literature to empirical research (Own table)

<table>
<tr><td colspan="8">2.</td></tr>
<tr><td colspan="4">Project Roles</td><td colspan="2">Project Actors</td><td colspan="2">Project Governance</td></tr>
<tr><td>Name</td><td>Involved</td><td>Interconnections</td><td>Risk-Bearing</td><td>Cluster</td><td>Actor</td><td>Cluster</td><td>Element</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">3.</td></tr>
<tr><td>Developer</td><td>Active</td><td>All (Active/Passive)</td><td>Development; Marketing</td><td rowspan="4">Asset Actors</td><td>Pre-Conversion Owner</td><td rowspan="2">Regulatory Requirements</td><td>Change of Land-Use Plan</td></tr>
<tr><td>Initiator</td><td>Active</td><td>All (Active/Passive)</td><td>-</td><td>Post-Conversion Owner</td><td>Building Permits</td></tr>
<tr><td>Investor</td><td>Active</td><td>Developer; Initiator</td><td>(Development); Marketing</td><td>Future Users (Tenants)</td><td>Forms of Collaboration</td><td>-</td></tr>
<tr><td>Designer</td><td>Active</td><td>Developer; Builder; Regulator</td><td>-</td><td>Municipality</td><td rowspan="3">Risk Allocation</td><td>Development Risk</td></tr>
<tr><td>Builder</td><td>Active</td><td>Developer; Designer; Regulator</td><td>Development</td><td rowspan="3">Project Actors</td><td>Real Estate Developer</td><td>Marketing Risk</td></tr>
<tr><td>Regulator</td><td>Passive</td><td>Developer; Initiator; Designer; Builder</td><td>-</td><td>Architect</td><td>Allocation of Liability</td></tr>
<tr><td>Advisor</td><td>Passive</td><td>Inconclusive</td><td>-</td><td>(Main-) Contractor</td><td rowspan="2">Finance</td><td>Funding of Development</td></tr>
<tr><td></td><td></td><td></td><td></td><td colspan="2">1.</td><td>Funding of Sales Transaction(s)</td></tr>
<tr><td></td><td></td><td></td><td></td><td></td><td></td><td colspan="2">4.</td></tr>
<tr><td></td><td>1</td><td colspan="2">Interview Participant Cluster</td><td>3</td><td colspan="2">Public Law Cluster</td><td></td></tr>
<tr><td></td><td>2</td><td colspan="2">Literature Cluster</td><td>4</td><td colspan="2">Private Law Cluster</td><td></td></tr>
</table>

8.1 Data Gathering

8.1.1 Semi-Structured Interviews

The type of empirical research used for this research is a series of semi-structured expert interviews. The characteristics of semi-structured expert interviews are perceived to be a good fit for exploratory research which is to a certain extent based upon existing knowledge (in this case; existing literature), but at the same time goes beyond the scope of the existing knowledge (Miles & Huberman, 1994; Wilson, 2013). The main advantages of semi-structured interviews are as follows (Wilson, 2013).

1. Semi-structured interviews are more likely to uncovering previously unknown topics and solutions.
2. Semi-structured interviews allow a less experienced researcher to obtain the desired output whilst still retaining point 1.
3. The predetermined questions of semi-structured interviews (including probe questions) provide controls to both validate literature based knowledge and uncover previously unknown topics and insights.

8.1.2 Participant Groups

In order to carry out a comparison of outcome and perception, the same questions were presented to representatives from three different types of project actors (table 24). All interviews were carried out between June 17th 2016 and July 19th 2016. An overview containing the details of the participants is displayed in 'Appendix C4: Participants Expert Interviews'. In total, fifteen interviews were aimed for, but due to planning constraints, thirteen interviews were carried out.

Table 25: Overview Interviewees (Own table, Restricted Access)

Cluster		Protocol	Company	Job Description	Project Role	Date
Real Estate Developers *(Cluster 1 - Table 24)*	R1	V1	**RESTRICTED ACCESS**	Real Estate Developer/ Partner	Developer	June 21st, 2016
	R2	V1		Director	Developer	June 17th, 2016
	R3	V1		Real Estate Developer	Developer	June 27th, 2016
	R4	V1		Director of Development	Developer	June 17th, 2016
	R9	V2		Development Manager	Developer Builder	July 1st, 2016
	R14	V2		Real Estate Developer	Developer	July 7th, 2016
Contractors *(Cluster 1 - Table 24)*	C5	V2		Development Manager	Developer Builder	July 11th, 2016
	C7	V2		Head of Preparation/ Board Member	Builder	July 15th, 2016
	C8	V2		Managing Director/ Partner	Builder	July 11th, 2016
	C15	V2		Chief Foreman	Developer Builder	July 19th, 2016
Architects *(Cluster 1 - Table 24)*	A11	V2		Managing Director/ Owner	Designer	July 7th, 2016
	A12	V2		Senior Architect	Designer	July 4th, 2016
	A13	V2		Senior Architect/ Partner	Designer	July 5th, 2016

In order for a professional to be a suitable candidate, the following predetermined criteria had to be met.

1. The candidate should possess a demonstrable experience within the real estate development sector in general and office conversions in the Netherlands in particular.
2. The candidate should, at the time of the interview, be working for a real estate developer, an architect or a contractor.
3. The candidate should possess experience in working either for a fully risk-bearing organisation or for an organisation which participates in office conversions in a fee based structure (consultancy).

8.2 Interview Protocol

Interview Questions

The interview protocol used to carry out the interview series is divided into two different elements. The first element consisted of a series of 12 questions which were communicated to the candidates prior to the interview. The questions were separated into 5 categories.

Table 26: Categories Interviews Questions (Own table)

	1	**Introductory question**	A single question which allowed the interviewee to convey his/her experience within real estate development and conversion projects in particular.
	2	**Control questions**	A total of three questions aimed at outlining the project phases and the dynamics in the division of project roles since the year 2008.
Cluster 2 (Table 24)	3	**Project role questions**	Three questions aimed at verifying the project roles in office conversion projects based upon the findings of the literature studies. The questions are centred on the role and activities of the organisation of the interviewee.
	4	**Project actor questions**	Two questions about the project actors with which the interviewee works with in office conversion projects and the influence of these actors on the feasibility of office conversion projects.
	5	**Project governance questions**	Three questions to allow the interviewee to convey their experiences in forms of collaborations, risk allocation and division of liability in office conversion projects.

Besides the pre-shared interview questions, each of the questions (project role, project actor and project governance) contained one or more probe questions. These questions were not shared prior to the interview, but served as a steering mechanism when the main questions were not perceived to be yielding sufficient result.

Over the course of the interview series, two different iterations of the interview protocol were used (see table 25). The main questions were not changed between the two versions, but version 2 had a stronger focus on the type of administrative conditions used and the liability borne by specific actors. The changes were made in conjunction with the graduation committee and used in 9 out of 13 interviews. Version 1 of the protocol can be found in 'Appendix C1: Interview Protocol Version 1'; version 2 in 'Appendix C2: Interview Protocol Version 2'.

Checklist Literature versus Practice

Besides posing interview questions to the interviewees in order to validate known topics and possibly uncover previously unknown topics, a direct comparison of data was also carried out. For this comparison, the validation matrix as displayed in 'Appendix C3: Checklist Literature versus Practice' was used. This matrix was created from the governance tasks 7 through 16 in the literature study (table 23).

For each of the interviews carried out, a checklist of phase involvement and governance task allocation was filled in during the conversation. The answers to the checklist were based upon the response of the interviewee over the course of the conversation. The contents of this checklist were not communicated to the interviewees in advance in order to limit the bias towards giving specific answers. At the end of each interview, the checklist was explained to the interviewee and any irregularities were discussed and cleared up immediately.

8.3 Data Analysis and Synthesis of Outcome

The thirteen interviews lasted between 45 minutes and 75 minutes. Upon request of the interviewees, access to the audio files is limited to the members of the graduation committee. Each of the audio files is transcribed; these transcripts are to be found in Appendix C5: Transcripts Participants (Restricted Access).

In order to translate the qualitative data (via analysis and synthesis) into conclusions and recommendation to actors involved in office conversion projects, a method described by Miles, Huberman, and Saldaña (2014) is utilised. Within their publications, Miles et al. (2014, p. 119) makes a distinction between five types of qualitative data analysis. The qualitative data analysis aimed at exploring is further divided into three sub clusters (Miles et al., 2014, p. 121).

1. Exploring
    a. Exploring Fieldwork
    b. Exploring Variables
    c. Exploring Reports in Progress
2. Ordering
3. Describing
4. Explaining
5. Predicting

Within this exploratory research, a combined analysis of fieldwork and variables is carried out. The final product of which will be a thematic summary based upon the interview questions. The thematic summary will be based around the clustered outcome of the responses by the interviewees; these within-clusters summaries are located in Appendix C6: Thematic Summaries Interview Clusters (Restricted Access). This is a two-step process analogous to the within-case and cross-case analysis aimed at noting patterns and themes. Unlike with the original method described by Miles et al. (2014) the within-case elements will not revolve around a specific case, but concern the three separate actor clusters (real estate developers, contractors and architects). The outcome of the empirical research is a cross-actor themed summary in which the views presented in the within-cluster summaries are combined and compared.

Appendix C6: Thematic Summaries Interview Clusters (Restricted Access) will contain direct quotes from the interview transcripts. In order to comply with anonymity requests by the interviewees, no direct quotes will be presented in the main text of this report.

8.3.1 Within-Actor Analysis

The variables discussed during the literature study (table 23) will be used to structure the transcript data into within-cluster thematic summaries. Within the case-level display (Miles et al., 2014) these topics will serve as variables.

Table 27: Topics in Within-Actor Analysis (Own Table)

I.	**Phase Involvement**	The manner in which the interviewee is involved across project phases in office conversion projects.
II.	**Regulatory Requirements**	The views of the interviewee on the manner in which public law activities (set out by the local government) affect the roles and collaboration within office conversion projects.
III.	**Collaboration**	An evaluation of the manner in which the interviewees view the collaboration between themselves and other actors.
IV.	**Supervision**	Views on which actor is perceived by the interviewee to be best suited to serve as project manager across project phases.
V.	**Risk Allocation**	The views of the interviewee on which actor is best suited to bear the development and marketing risk for office conversions.
VI.	**Liability**	The views of the interviewee concerning accountability and possibilities for carrying increased liability.
VII.	**Finance**	An evaluation of the views on sources of finance for office conversion projects.

8.3.2 Cross-Actor Analysis

The cross-actor analysis shall be deduced from the within-actor analysis in a themed summary. This method allows for a presentation of the outcome of the interview series without losing the views of the interviewees on the division of roles. If a matrix based system based upon coding (of words and segments) would have been implemented in the cross actor analysis, the benefit of using transcripts could be lost.

The topics for the cross-actor analysis are created through alignment of the topics of the within-actor analysis with the sub research questions displayed in chapter 2 of this report. Aligning the cross-actor topics with the sub questions has been done in accordance with Miles et al. (2014) and Wilson (2013).

Table 28: Transfer from within-actor topics to cross-actor topics (Own table)

Sub Questions	Within-Actor Topics		#	Cross-Actor Topic
Which activities and corresponding roles have to be carried out in an office conversion project?	Phase Involvement (I)		A	Phase Involvement
Which project governance structures and risk-/liability allocation are in common use for office conversion projects since 2008?	Collaboration (III)	Risk Allocation (V)	B	Governance Structure
	Supervision (IV)	Liability (VI)		
What is the performance record of the types of market parties which have participated in Dutch conversion projects in a risk-bearing role since 2008?	Collaboration (III)	Finance (VII)	C	Actor Performance
	Risk Allocation (V)	-		
Which project role based factors have an impact on the feasibility of Dutch office conversion projects?	Regulatory Requirements (II)	Risk Allocation (V)	D	Feasibility Driver
	Supervision (IV)	Liability (VI)		
Which alterations to the common actor-role pairing in office conversion are likely to be of benefit to upcoming office conversion projects?	Phase Involvement (I)	Supervision (IV)	E	Role Allocation
	Collaboration (III)	-		

Table 29: Explanation of Cross-Cluster Topics (Own Table)

A.	**Phase Involvement**	A description the current perception of the interviewees on the points at which they are currently involved in office conversion projects.
B.	**Governance Structure**	A comparison of the views among interviewees on the risk exposure of their employer and the allocation of liability.
C.	**Actor Performance**	An overview at the success rate perceived by interviewees for conversion projects since 2008.
D.	**Feasibility Driver**	Assessment of which project specific characteristics either support or hamper the feasibility of office conversion project under current market conditions.
E.	**Role Allocation**	Demarcation whether or not alterations to the currently used actor-role pairings are perceived to be beneficial to feasibility of office conversion.

9 Outcome Empirical Research

Based upon the seven within-cluster topics and the thematic summaries (Appendix C6: Thematic Summaries Interview Clusters (Restricted Access)), five cross-clusters topics are formulated in accordance with the sub research questions. Within this cross-cluster summary, no direct quotes from the interviews will be presented. This decision is made in order to comply with the request of several interviewees to keep their contribution to this research confidential. The identity of all interviewees is known to the graduation committee. Access to the interview data (appendices C5 and C6) is only available to members of the graduation committee or through a written request to the author.

9.1 Phase Involvement

Market for Office Conversion Projects Since 2008

Current market conditions for conversion projects (time of writing August 2016) are perceived by the respondents to be at a turning point. This view is presented more strongly among real estate developers and architects than among contractors. The demand market for conversion projects in the Netherlands is described by the respondents as having been heavily reliant upon conversions from office to hotel between 2008 and 2013, especially in the larger cities. According to the interviewees, the possibilities for creation of hotel rooms through conversion are decreasing due to municipal intervention. The second notion is that obtaining suitable assets (accessible location, owner willing to sell, suitable land-use plan) for conversions is becoming more and more difficult. The demand for office space is perceived to be on the increase and the development costs related to a renovation (without change of function) are substantially lower than those related to a full conversion. This has led to a situation in which (especially) real estate developers are currently on the fence as to whether or not ongoing projects have to be carried out as a full conversion or as a renovation (and maintain the office function). In this case, creation is described by the interviewees as renovation and rejuvenation, rather than turning towards the creation of new built office space.

A second consequence of the economic downturn is a reduction in willingness to take up project risk; this notion is most prevalent among the consulted contractors and architects. From 2008 through to 2013, real estate developers utilised the possibilities created by the tightness in the market to split the realisation into multiple segment (structural, mechanical installations, electrical installation and interior) and tender each segment separately. Since 2013, contractors are mentioned to be less willing to go along with split tendering and are pushing strongly for a main contractor structure, preferably without tendering. Under current market conditions, contractors note to have a full portfolio of work and can afford to take this negotiation position.

In terms of obtaining financial means to carry the development costs for conversion projects, the consulted real estate developers noted that the possibilities of obtaining financial means through bank loans are still limited, as well as that private equity has been responsible for bankrolling the majority of successful conversion initiatives in recent years. On the side of the contractors, an opposing view is presented. The consulted contractors view that obtaining funds is not a limiting factor in conversion projects anymore. This notion is explained through a comparison of project margins demanded by the risk-bearing actor in order to feasibly carry out a development project. Contractors are used to carrying out projects at a much lower risk and profit margin than real estate developers. This difference has a stronger effect on high budget conversions and is mentioned to make large scale (high budget) conversion more suitable to be funded and managed by developing builders rather than real estate developers.

The market dynamics have resulted in two structures being added to the traditional risk-bearing developer led project governance structure; the first being fee development structure tailored to conversions and on the second structure being the developing builder led governance structure created through forward integration of tasks by contractors. These three structures will be elaborated in paragraph 9.2.

Project Tasks

Figure 20 contains an overview of the project roles according to the interview data obtained. The upper segment "Interview Data Direct" contains the views of interviewees on the respective project roles. The segment "Interview Data Indirect" outlines the views of the interviewees on non-consulted project roles. In comparison to the literature data on project roles and role involvement, several structure changes to the phase involvement have to be made. The first being switching the project phases Initiation (1/2) and Feasibility (3). This change is informed by the general view that project initiation and determining feasibility is a collaboration between the investor (asset owner) on the one hand and a combined effort of the developer, architect and market advisor (real estate broker) on the other hand. Consequently, no significant evidence of a separate (non-risk bearing) Initiator role was put forward by the interviewees.

Two more changes to the phase involvement revolve around splitting the role 'Developer' into the 'Fee Developer' and the 'Risk-Bearing Developer'. The phases in which these roles are involvement are similar, the distinctions between these roles involve risk, liability and finance and will be discussed later on. Based upon the same variables, the Developing Builder role is added to the Builder role.

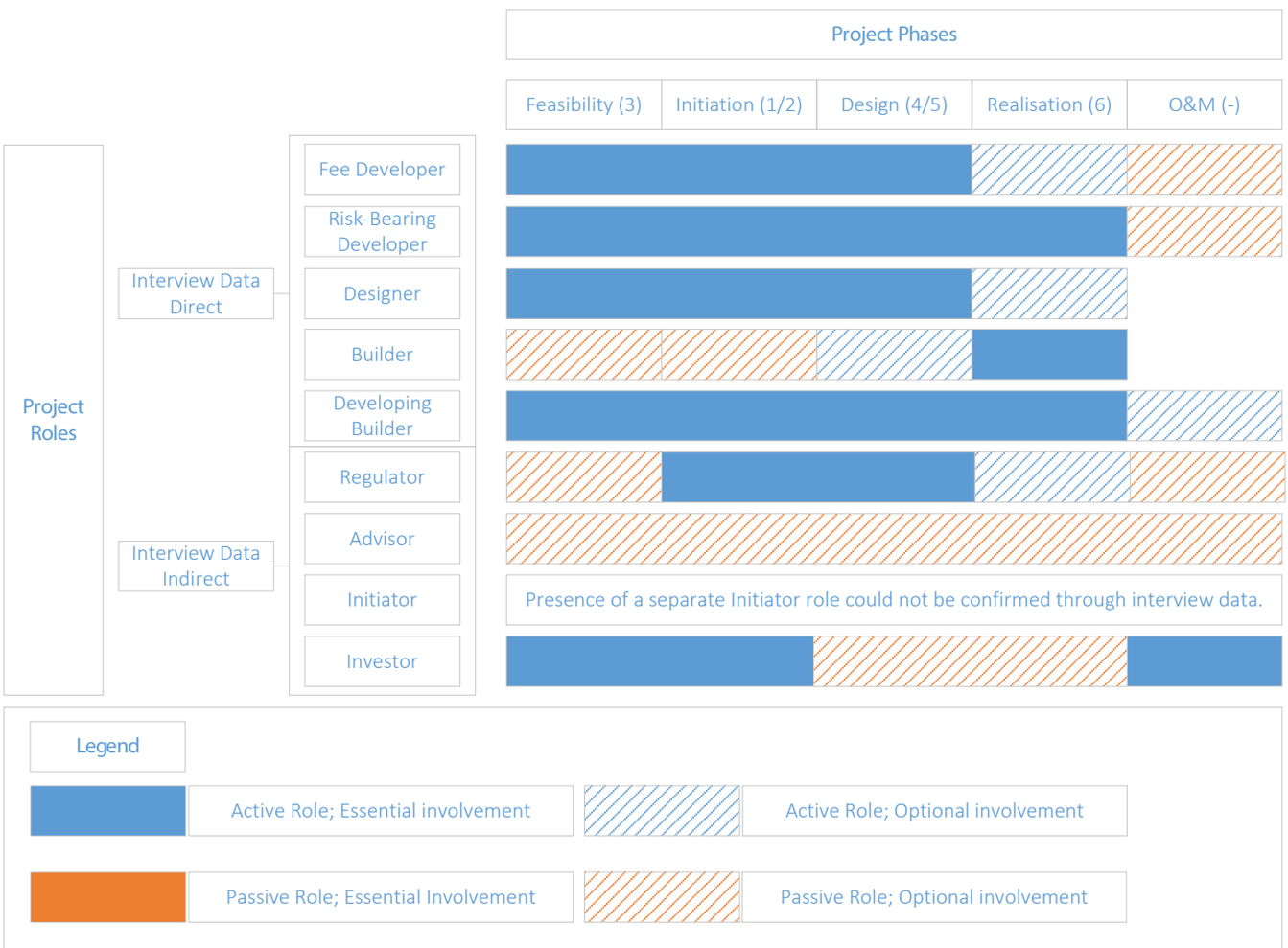

Figure 20: Involvement of project roles across phases according to interview data (Own Illustration)

Once feasibility of the business has been determined, the conversion project is carried and managed by either of three projects roles; Fee Developer, Risk Bearing Developer or Developing Builder. If the project is managed by either a Risk-Bearing Developer or a Developing Builder, the project role Investor does not exist during Design (4/5) and Realisation (6). A Fee Developer is a non-risk bearing (limited liability) advisor for the development process, this role requires continuous involvement throughout project phases of an investor (asset owner) in order to exist. The involvement of the project roles Designer and Advisor are confirmed to conform to the existing descriptions in literature, with the Designer role actually being an advisory one. All respondents do however agree that the importance of the Designer role is such that a separate project role is validated.

The responses of the interviewees to the business profiles of each of the project roles have been gathered in table 30. Only the project roles under "Interview Data Direct" (figure 20) are included.

Table 30: Business profiles project roles (Own table)

	Governance Task *(Table 23)*	**Project Role**				
		Involvement: Core/Non-Optional Non-Core/Optional Non-Core/Null				
#		*Fee Developer*	*Risk-Bearing Developer*	*Designer*	*Builder*	*Developing Builder*
7	Changes to land use plan	Optional Non-Core	Optional Non-Core	Optional Non-Core	Optional Non-Core	Optional Non-Core
8	Building permits	Optional Non-Core	Non-Optional Non-Core	Optional Non-Core	Optional Non-Core	Optional Non-Core
9	Project management	Core	Core	Optional Non-Core	Optional Non-Core	Optional Non-Core
10	On site supervision	Optional Non-Core	Optional Non-Core	Optional Non-Core	Optional Non-Core	Optional Non-Core
11	Contracting of out-sourced activities	Core	Core	Optional Non-Core	Optional Non-Core	Non-Optional Non-Core
12	Allocation of development risk	Null	Core	Null	Null	Core
13	Allocation of marketing risk	Null	Non-Optional Non-Core	Null	Null	Optional Non-Core
14	Allocation of liability	Limited	Full	Limited	Limited	Full
15	Funding for development	Null	Core	Null	Null	Core
16	Funding for sales transactions	Null	Non-Optional Non-Core	Null	Null	Optional Non-Core

	Explanation of terminology	
	Core	Task around which the corporate business model of the project roll is build.
	Non-Optional Non-Core	Task which is not directly linked to the business model, but has to be carried out by the actor filling the respective project role in office conversion.
	Optional Non-Core	Task which could be carried out by the actor filling the respective project, but involvement is not mandatory.
	Null	Task for which the actor filling the respective project role is not perceived to be suitable.
	Limited	Liability under DNR2011, UAC1989(2012) condition.
	Full	Liability under UAC-IC2005 or comparable proprietary conditions.

9.2 Governance Structure

The governances structures currently used for office conversion projects are displayed in figure 21, figure 22 and figure 23. Interviewees note that three main governance structures are currently used in Dutch office conversion projects. If the pre-conversion asset owner wishes to sell the vacant office asset, the only option is to utilise the traditional system of selling the asset to a **risk bearing developer** (Figure 21).

The general view among respondents (3 out of 3 architects and 3 out of 6 developers) is that the possibilities of using this type of governance structure are limited and only useable for developers funded through private equity or a large scale contractor. The main perceived benefit of selling to a risk-bearing developer is that the developer itself has maximum control over the creation of value through ownership. The most often mentioned downside is that this structure does not address the issue of devaluation by institutional owners. The possibilities of temporary ownership by a developing builder are described by all contractors as limited due to the small profit margins used by contractors and the subsequent risk-effects. In terms of ownership, 4 out of 6 real estate developers see no harm in starting the design process without having a guaranteed post-conversion sale. In contrast, all consulted contractors mention that ownership without a guaranteed sale is no option for them.

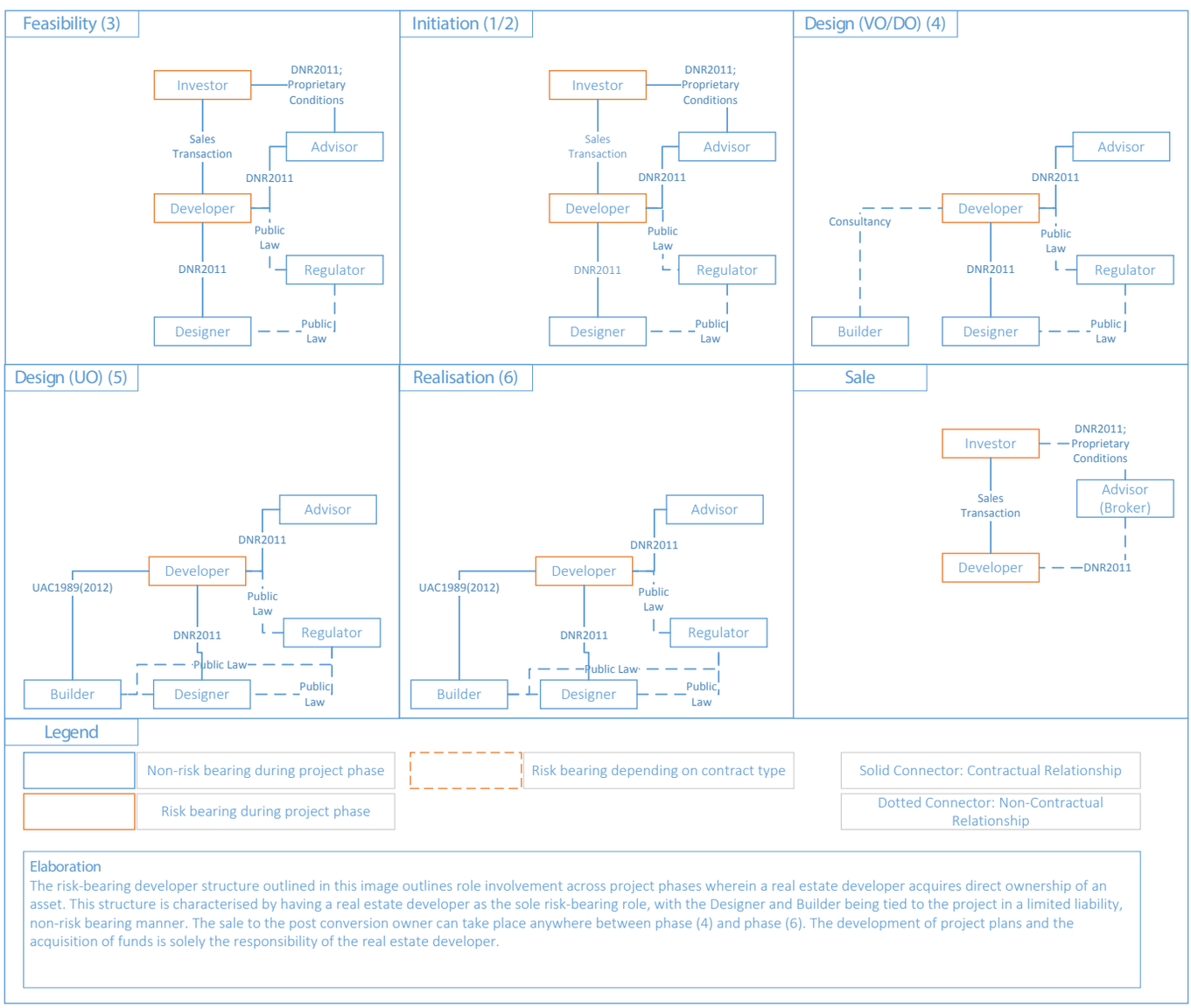

Figure 21: Governance structure risk-bearing developer (Own Illustration)

When the **ownership** of the asset remains with the same actor pre- and post-conversion, there are two perceived possibilities for project governance. A fee development structure (figure 22), in which the owner hires a non-risk bearing developer who serves as a **delegated project client**. The main upsides to hiring a fee developer are the fact that the owner does not have implement asset devaluation at once prior to a sale, but is able to gradually implement this process over the course of the project. A second benefit of this structure mentioned by 3 out of 6 real estate developers is that the level of project control for the asset owner is increased due to the continuous involvement. Downsides to the fee development structure are the **increased risk exposure** of the asset owner due to the limited liability borne by the development company and the limited project control for the developer in relation to the work carried out.

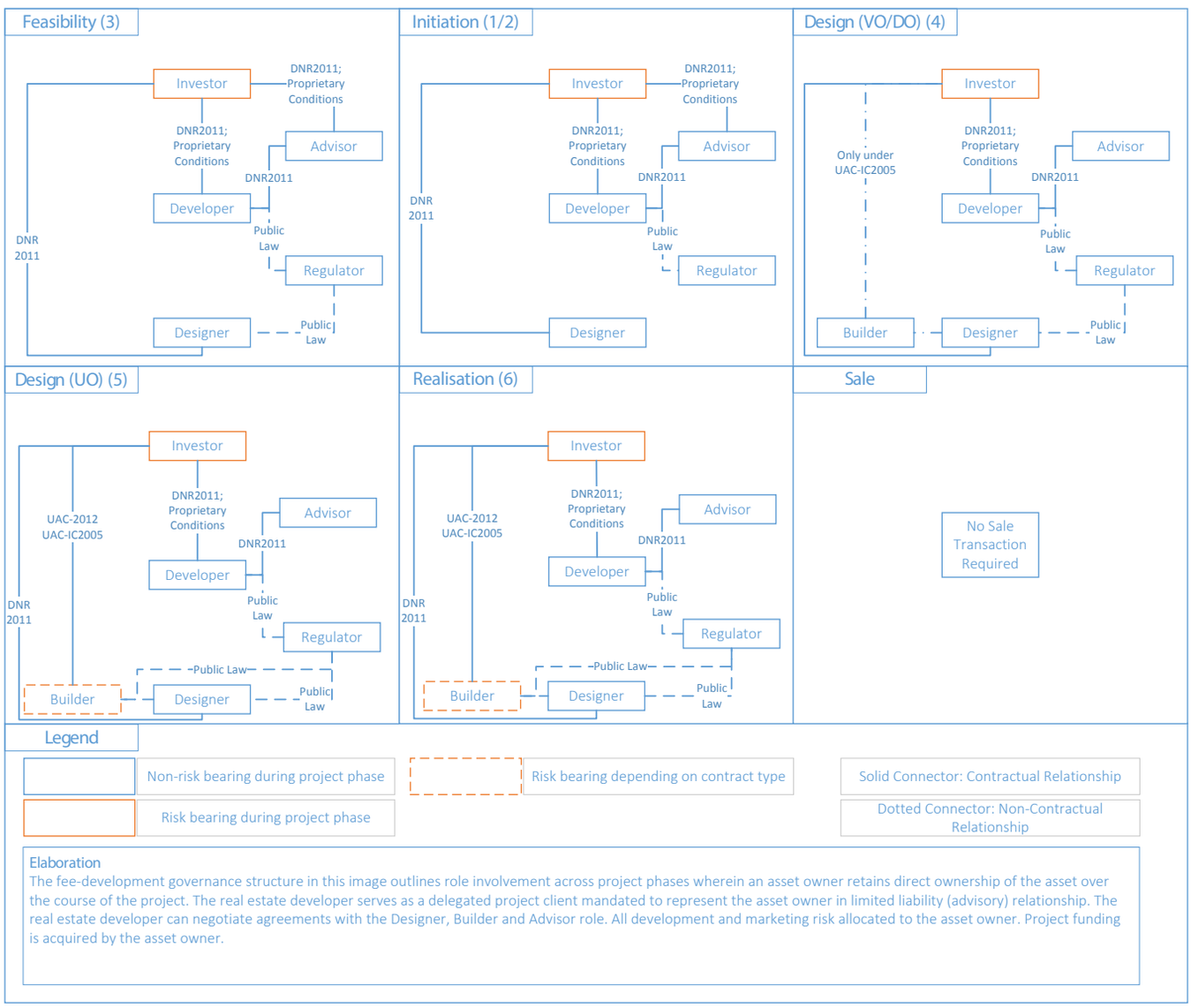

Figure 22: Governance structure fee developer (Own Illustration)

When the asset owner wishes to reduce its risk exposure but still exercise influence over the design of the product, involvement of a **risk-bearing developing builder** (figure 23) is mentioned as an option. This structure exists in two versions. The first centres on the turnkey realisation agreement wherein the asset owner serves as project client during Feasibility (3), Initiation (1/2) and Design (4). After the definitive design (DO) is completed, the project is tendered to the market as a turnkey realisation agreement in which the developing builder is made liable for all development- and realisation risk from that point onwards. The second possibility for the asset owner is to expand the role of the developing builder with the design risk (i.e. contractually tying the Designer role to the Builder role). This type of structure can, according to the consulted contractors, only be feasible tendered through either a Design & Build or an Engineer & Build (both UAC-IC2005) agreement, 3 out of 4 contractors note that conversions are more suitable for implementing D&B and E&B collaborations than new built real estate due to complexity caused by existing drawings

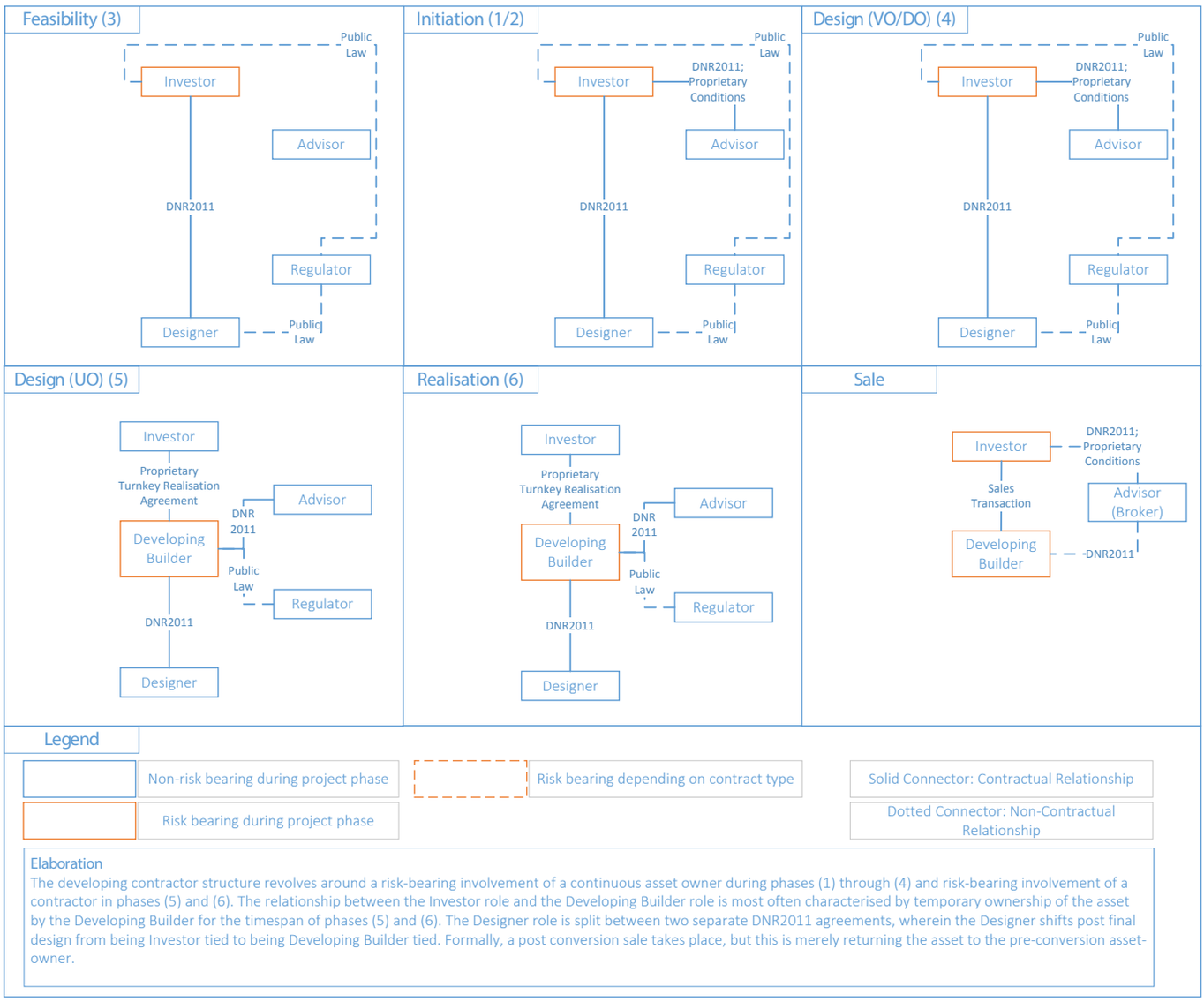

Figure 23: Governance structure developing builder (Own Illustration)

9.3 Actor Performance

Across the three interview clusters, the perception of success in office conversions is varied. The consulted architects and contractors agree that while the amount of conversion initiatives is extensive, the ratio of initiatives to actually completed projects is low. The consulted real estate developers provide a more positive view on the success rate. Beyond the difference in perception, no underlying causes were mentioned.

Collaboration

Across all three clusters, interviewees responded that the characteristics **creativity (50%)** and **financial means (35%)** are the most important attributes an actor has to possess in order to successfully collaborate within conversion projects, with **market knowledge (15%)** also mentioned as important, but not as much of a limiting factor. Even though collaboration is perceived by the respondents as more crucial than for comparable new built real estate, the views on how to create performance through collaboration differs among respondents.

In terms of collaboration in design phase, the interviewees disagree on the level of adherence to design phases. For the respondents mainly involved in risk-bearing developments, adherence to design phases is perceived to be of lesser importance than achieving the final project (cluster real estate developers). This view consists of working towards a final design in non-scheduled iterations in order to save time on the bureaucracy. Contrary, for a fee-development, adherence to design phases is mentioned to be a more important success factor in order to obtain approval from the asset owner (validation). All three consulted architects mentioned that working phase by phase (from sketch design towards executional design (UO)) is preferable from their point of view due to payment structures and design validation.

Risk Allocation

A notion which I did not expect prior to starting the empirical research is that an ability to take up development risk is not perceived to be a qualification for being a functional real estate developer. Furthermore, developers mentioned that they perceive an increased need for non-risk bearing development advisors (fee-developer). Both asset owners who do not wish (or are allowed to) sell assets and development advisors are mentioned to benefit. The existence of non-risk bearing developers also aides the traditional (risk-bearing) developer in focussing on acquisition based projects. One notion is to use a fee development as a pilot project with a foreign asset owner in order to build trust and subsequently ease future sales transactions.

The view of the contractors towards risk allocation can best be described as ambiguous. The interviewees underline (4 out of 4) their ability and willingness to obtain a more risk-bearing role (only for development risk, not for marketing risk), but do not view themselves as dependant on a risk-bearing involvement to be successful (unlike traditional real estate developers). Building is described by all contractors to remain the core business. Even more so than with the consulted real estate developers, contractors are only willing to take up development risk if full project control is guaranteed. The main tool mentioned by the contractors for exerting the required project control is the implementation of BIM technology in which the contractor serves as the central hub (combining information into the BIM model) during both design and realisation.

As for risk allocation towards the architect, each of the consulted architects was of the opinion that they should only serve as a non-risk bearing actor. This view is supported in the developer- and contractor cluster. Increased involvement of the architect as a project- or process manager is mentioned as a possible task expansion, but only under limited liability conditions.

Finance

On the matter of the allocation of project finance, the success record of risk-bearing fully independent real estate developers is mentioned by all architects and contractors to be highly reduced since 2008. In order for a conversion project to become financially feasible, the consensus is that a project has to be borne by either a private equity investor (through the risk-bearing developer structure), a continuous institutional owner (same actor pre- and post-conversion) or a developing builder. Real estate developers view themselves as suitable actors for funding projects both when a future purchase is secured as well as in situations where a buyer is not secured. The consulted contractors made it clear that funding a project is only possible when the project has a guaranteed post-conversion buyer. When a purchase is guaranteed, contractors don't see any issue with pre-funding the development budget.

9.4 Feasibility Driver

Regulatory Requirements

As is visible in figure 20, the perception of the involvement of municipality (regulator role) is perceived to be active during Initiation (1/2) and Design (4/5). Unlike the view which is often presented in literature, the actual influence of the municipality is deemed by the consulted real estate developers and architects to be critical, but not obstructive. The non-obstructive nature is explained through the fact that very few conversion initiatives are abandoned due to the non-compliance of the municipality. Even though the behaviour of the municipality is deemed not to affect the final outcome (i.e. approval of permit requests), the turnaround time of permit requests is mentioned to still be an important issue for office conversion projects. It is noted to be a longwinded process in which special initiatives within the municipality (task forces, pilots) are not adequately aligned with permit departments, leading to work being carried out more than once. This resulted in a situation in which 2 out 3 architects and 3 out of 6 real estate developers perceive the process time of permit request as unfeasibly long.

Supervision

Across the board of the consulted developers and contractors, the interviewees view a real estate developer to be the most suitable actor for serving as project manager. If the construction is allocated to a (traditional) Builder, a separate real estate developer has to be present. In the case of a Developing Builder, this task is described as suitable to be allocated to a development vehicle of the respective contractor. The first driver for suitability in project management is such that management should be carried out from content, rather than process. With conversion projects being more complex in terms of being a circular approach (rather than a linear approach for new built real estate), conversion projects are perceived to be more feasible when managed by a risk-bearing actor or an experienced fee developer. The second driver for suitable supervision is the amount of (non-contracted) external stakeholders which are tied to with the project. Once the amount of external stakeholders increases, especially for listed buildings, the builder and architect are mentioned to be less suitable for project management.

Design supervision by the architect during the realisation phase is perceived by the consulted real estate developers and contractors to be only suitable for allocation to the architect. The view from the contractors is that the input in terms of design supervision should be limited to the 'look and feel' of the design in order limit the risk of liability clauses having to be enforced by the post-conversion asset owner towards the contractor. Final decisions made in terms of design supervision should, according the interviewees in the developer cluster, be made by the real estate developer.

Risk Allocation

The project risk most prevalent across the interviews is that of a guaranteed purchase post-completion. On this topic, there is a disagreement between the consulted real estate developers and contractors. Whereas contractors all pointed towards the necessity of having a buyer (and when possible also a tenant) lined up in order to be willing to bear development risk in the Developing Builder role, real estate developers proved to be more willing to commence a project without a guaranteed buyer. The trade-off on which this decision hinges is project control versus project risk. Real estate developers (in a risk-bearing capacity) prefer total control over the project and are consequently willing to accept the risk of starting without a secured purchase. Contractors on the other end perceive that they cannot cover this risk under their profit margin.

The underlying structure behind this trade-off is the profit margin calculated by each actor. Real estate developers calculate project budget with a profit margin of up to 15% on a project and therefore more willing and able to take up risk. A contractor's profit- and risk margin is mentioned by the interviewees to be capped at 2%. The perceived benefit of employing a lower margin is that it increases feasibility on large scale projects due to the profits being calculated as per project budget. Contractors note that *"if developers were to bring their profit expectations closer to that of contractor, far less conversion proposals would falter on financial feasibility, especially for high budget projects."*

Liability

On the topic of allocation of liability, a significant (but unexpected) insight is the relationship between project feasibility and increased liability demands towards advisors. According to respondents, demanding increased liability from advisors above and beyond DNR2011 requirements is occurring more often. This is mentioned to go so far is being asked to insure a fee based activity for up to 2.5 million euros, even if the fee itself does not exceed 100.000 euros. The respondents are split as to whether shifting liability is beneficial towards feasibility. One mentioned view is that increased liability merely serves as a manner to mitigate development risk for the risk-bearing actor. On the other end of the spectrum, contractors (especially developing builders) are of the opinion that shifting increased liability towards advisors only complicates interconnections between actors and that any occurring claims in general cannot be placed upon (often small) advisors. Whether or not pushing increased liability (above DNR2011) on advisors is in line with proportionality guidelines is perceived to be debatable. This practice does however open the possibility of clients basing tender decisions on which advisor is able to secure the best insurance level rather than on which advisor (architects included) is actually best suited for the task at hand. This is mentioned to be an undesirable prospect.

9.5 Role Allocation

The most often mentioned alternation to the role allocation and collaboration approach for office conversion projects is still **the need for institutional real estate owners to bring the value of a vacant asset in line with the current market value rather than the institutional book value**. Whilst all respondents agreed on the importance of this matter, the perceived reality is such that this ideal solution is not going to happen across the market. One solution which is proposed during the interviews is the before mentioned fee development route. This would allow conversion projects to take place without the institutional owner being forced to sell under book value. This approach very much hinges on the restrictions of the portfolio of the respective asset.

The role of the developer has already changed to a more risk-averse profile in comparison to the situation prior to 2008. A further shift which is noted to be of benefit for the real estate developer is to serve as **mediator in addressing the issue of split ownership** in mono functional office locations. In this role, the real estate developer would not acquire direct ownership. The developer would allow asset owners to tackle conversion projects on an area wide basis rather than one building at a time, the latter being universally agreed upon by the interviewees as unfeasible.

Another role allocation shift which is met with a positive attitude by the interviewees is an **increased risk-bearing involvement of the contractor.** The main benefits of having a developing builder as the primary actor in a turnkey realisation agreement is that it allows the contractor to only take up development and realisation risk without the need for the contractor to acquire the building using equity or external funding. The emergence of BIM technology and its specific applicability to conversion projects is perceived to further increase the suitability of the contractor as the lead actor. Whether or not using BIM to model a conversion project is feasible depends on the quality level of the existing drawings. A direct consequence of an increased role of the contractor is a reduction in architect involvement. This could lead to a division of roles in which the architect becomes much more of an advisor for the 'look and feel' of the design, reporting to the contractor.

As for the **collaboration between the market actors and the local government**, municipalities are advised by the interviewees to shift the focus from the creation of special initiatives (task forces; pilots) to improving internal alignment between the special initiatives and the departments tasked with reviewing and processing approvals for alterations to land use plan and environmental permits.

The division of project roles in terms of **liability** is mentioned to benefit from review, especially on the topic of adherence to limited liability (proportionality) and the fair distribution of liability between advisors and risk-bearing actors (clients). Spending less effort on securing insurance towards advisors as well as trying to divert liability further down the supply chain, and spending more effort on aligning liability with those actors who actually expose themselves to development and marketing risk.

9.6 Summarised Statistics

Across the thirteen interviews, the following relevant statistics can be summarised.

- Complexity of conversion is confirmed by 4 out of 6 developers as higher than for comparable new built real estate, with increased complexity during feasibility and initiation. Increased complexity is mentioned by all architects and 2 out 4 contractors.
- The traditional risk-bearing developer structure was mentioned as being used by 5 out of 6 developers.
- In the developer cluster, 4 out of 6 respondents acknowledge the viability of the fee-developer for conversion projects, even when they themselves do not utilise the fee-developer structure. The other 2 out of 6 noted that full project control is of such importance to the developer, that fee-developments are not preferable.
- Working in a design-/building team is mentioned by all respondents as a positive incentive. Contractor involvement (beyond advice) during feasibility and initiation is disapproved by all architects and 2 out of 6 developers. Approval for early contractor involvement supported by all contractors and 4 out of 6 developers.
- A separate project initiator role is mentioned by 2 out of 13 respondents.
- The desired role of the local government is described by 8 out of 13 respondents as “active facilitation”.
- Devaluation of the asset’s book value by the asset owner is described as a restrictive element by all real estate developer and 3 out of 4 contractors. No direct solutions to this issue were mentioned.
- As for use of administrative conditions, all respondents mentioned DNR2011 conditions as being used by their employer to govern relationships with architects and advisors. The UAC-IC2005 was mentioned by 2 out of 4 contractors as the most common, but by none of the real estate developers. UAC1989(2012) was mentioned as the most common conditions by 4 out of 6 real estate developers to govern the relationship the contractor. One developer mentioned to be using propitiatory turnkey agreements.
- In the architect cluster, none of the respondents mentioned a positive attitude towards expanding the risk profile of the Designer role.

Section D: Conclusions and Advice

10 Comparison Literature versus Practice

A separate description of both the existing views on phase involvement and collaboration in literature (chapter 7) as well as the views from the interviewees (chapter 0) has been discussed. This chapter contains an overview of the areas in which literature and empirical research overlap or differ. The contents of this chapter will centre on the figures related to phase involvement and collaboration structures.

10.1 Governance Structure

The project roles described in existing literature are mostly formulated from the point of view of the risk-bearing real estate developer who acquires ownership for a limited time span (structure 0). The empirical data points towards three main project structures (1, 2 and 3). Table 31 compares the presence of the project roles across the four governance structures. References to governance structures displayed in previous chapters are provided.

Table 31: Comparison Project Roles in Literature versus Empirical Data (Own Table)

Project Role	**Literature**	**Empirical Research**		
	0	*1*	*2*	*3*
	Figure 19	Figure 21	Figure 22	Figure 23
	Risk-Bearing Developer Structure	*Risk-Bearing Developer Structure*	*Fee-Developer Structure*	*Developing Builder Structure*
Risk-Bearing Developer	X	X		
Fee Developer			X	
Initiator	X			
Investor	V	V	X	X
Designer	X	X	X	X
Builder	X	X	X	
Developing Builder				X
Regulator	X	X	X	X
Advisor	X	X	X	X
	Legend			
	X	Continuous Involvement		
	V	Involvement Pre- or Post-Conversion		

When comparing the risk-bearing structure described in literature (0) with the views from practice (1), the only noticeable difference is the absence of a specific initiator role in the empirical data. Structures 2 and 3 are not outlined in detail in existing literature and can therefore not be directly compared to structure 0. It can however be stated that the decision to implement one governance structure over another hinges on the involvement of the Investor role (asset owner).

The main driving force for deciding upon a governance structure mentioned in literature is the ability of obtaining funds. The driving forces mentioned in practice (besides the ability of obtaining funds) are the knowledge concerning the Dutch real estate market of the pre-conversion asset owner, the guarantee of a post-conversion sale and the level of project control demanded by the risk-bearing actor.

The project governance structure described in literature (0) is set up around a separation of tasks and responsibilities, the same can be said of the structures 1 and 2. Structures 3 (Developing Builder) is designed around (contractual) integration of project- and governance tasks.

10.2 Phase Involvement

As per the three governance structures mentioned in table 31, the involvement of the project roles across the different phases of the project also differ when comparing literature and empirical data.

Figure 24: Comparison project roles in literature versus empirical data. (Own illustration, literature findings based upon references in figure 15)

Across both literature and empirical data, the project roles Developer and Investor are perceived to be the critical roles in terms of bearing development and marketing risk. Development risk in literature is being solely allocated to the Developer role. In practice, there is a split between the development risk allocated to Developer role, the Investor role (Fee-development) and the Developing Builder role. The Initiator as a separate role, which is mentioned across literature, could not be confirmed through the data from the interview series. The general perception is that project initiation is a governance task to be allocated to either the Developer role or the Investor role.

The interview data contains the notion that the involvement of the Investor role is more varied in practice than in literature. Existing phase models are based upon ownership by the Developer role followed by a post-realisation sales transaction. In practice, ownership can be both split (different pre- and post-conversion owner) as well as continuous (asset remains within portfolio).

The Designer role is described similarly in both literature and empirical data. The one difference which was noted is that project management by the architect during the realisation phase is deemed a possibility. This notion is however not universally supported by the consulted architects and explained as a business structure decision.

The phase involvement of the Builder role (regardless of being a traditional builder or a developing builder), is characterised by a positive attitude towards early contractor involvement (prior to an executional design tender (UO)). Under the traditional builder role, this would involve an advisory role of the contractor during the preliminary design (VO) and the detailed design (DO) in a design-/building team.

The Regulator role (most often filled by a municipality) is described in the empirical data to be more active than described in literature. The desired policy of active facilitation by the municipality contains involvement during initiation and feasibility through special initiatives with an internal hand over to the permit department.

In terms of operation and maintenance, no one project role is mentioned in literature or interview data to be all encompassing for this project phase. The involvement of the post-conversion asset owner is mentioned, but active involvement of the asset owner in operation and maintenance is perceived to be rare. With conversion projects being described in the empirical data as a cyclical process starting with operation and maintenance, there appears to be market gap for actors with experience in this project phase who also already have close ties (trust) with institutional asset owners.

10.3 Governance Tasks

The differences in the allocation of governance tasks between literature and empirical data appear to be a direct consequence of splits for the Developer (Risk-Bearing- and Fee-) role and the Builder (Traditional- and Developing-) role. The extent of the governance tasks in literature was confirmed in the empirical research. Table 32 contains a comparison between the possible allocation of governance tasks in literature and in accordance with the empirical data.

Table 32: Comparison Governance Tasks Literature Study versus Empirical Research (Own Table)

#	**Governance Task** *(Table 23)*	**Allocation to Project Roles According to Literature Study** *(Table 23)*	**Allocation to Project Roles According to Empirical Research** *(Table 30)*
7	Change land-use plan	Developer Designer	Fee-Developer Risk-Bearing Developer Designer
8	Building permits	Developer Designer Builder	Fee-Developer Risk-Bearing Developer Builder Developing Builder
9	Project management	Developer Designer Builder	Fee-Developer Risk-Bearing Developer Developing Builder
10	On-site supervision	Designer Builder	Designer Builder Developing Builder
11	Contracting of outsourced activities	Developer Builder	Fee-Developer Risk-Bearing Developer Developing Builder
12	Allocation of development risk	Developer Builder Investor	Risk-Bearing Developer Developing Builder Investor
13	Allocation of marketing risk	Developer Investor	Risk-Bearing Developer Investor
14	Allocation of liability	Developer Designer Builder	Risk-Bearing Developer Developing Builder
15	Funding for development	Developer Investor	Risk-Bearing Developer Developing Builder
16	Funding for sales transactions	Developer Investor	Risk-Bearing Developer Investor

In general, the allocation of governance tasks in practice coincides with existing literature. There are however several points in which the perception on role allocation differs.

- The split of 'Developer' into 'Fee-Developer' and 'Risk-Bearing Developer' leads to risk- and funding allocation not being applicable to all Developers, which contradicts the view in literature that real estate developers should always be risk-bearing.
- 'Contracting of outsourced activities' can be allocated to the Fee-Developer role. The contracts are however made to the asset owner via the actor filling the Fee-Developer role (Figure 22).
- The transfer of liability to the Designer role is mentioned as a possible allocation in literature, whereas the consulted architects in the empirical research all discourage this allocation.
- According to literature, the 'project management' task could be allocated to the Designer role. In practice, the task 'design supervision' tends to be split from the predetermined governance tasks 'project management' and 'On-site supervision'. The supervision of the design can in turn be allocated to the Designer role on an advisory basis.

11 Conclusions

This chapter contains the conclusions in the form of answering the following main research question; *'Which project governance structures and subsequent division of project roles among actors is suited for Dutch office conversion projects?'*

In order to formulate a clear and cohesive answer to the main research question, each of the sub research questions will be addressed first. As a result of utilising semi-structured expert interviews, unexpected insights and topics of interest were gathered over the course of the interview series. These will be presented in a separate paragraph after the answers to the sub questions. The answer to the main research question will be based upon the sub questions as well as the unexpected insights.

11.1 Sub Questions

Sub Question 1: Which activities and corresponding roles have to be carried out in an office conversion project?

The core activities of office conversion projects are similar to those related to a new built-real estate project. The traditional project phases Feasibility, Initiation, Design, Realisation and Operation & Management still have to be followed. However, there is a difference as to how market actors perceive the process. Conversion projects require a circular approach as the risk-bearing actor is burdened with taking over during Operation & Maintenance of a vacant (or partly vacant) asset. Project roles in office conversions are Developer (Fee- or Risk-bearing), Designer, Builder (Traditional- or Developing-), Regulator, Advisor and Investor (Pre- and Post-conversion). The project role Initiator is often mentioned as a separate distinctive project role in literature, especially in literature commissioned by government entities. However, after consulting market actors, the specific Initiator role could not be confirmed and is mentioned by the interviewees to be overlapping with the Risk-bearing Developer role and the Investor role. Figure 25 contains the involvement of project roles across phases.

Figure 25: Involvement of project roles across phases according to interview data (Own Illustration)

After the literature study, the hypothesis 'Risk allocation results into two possible central hub roles in office conversions, fully risk bearing or fee-developer', could neither be confirmed nor disproved. In the empirical research, a split in risk allocation between fully risk-bearing and fee-developer is confirmed, but the possibility of risk-bearing involvement by a contractor (Developing builder) has to be added.

Sub Question 2: Which project governance structures and risk-/liability allocation are in common use for office conversion projects since 2008?

From the literature study, it was concluded that the only viable project governance structure for office conversions is a structure which contains acquisition of the asset by a risk-bearing developer, with a post-conversion sale being mandatory to the creation of project value. Empirical research has led to defining two additional project governance structures. The three structures are elaborated below.

1. Risk-bearing project developer (Figure 21)
   The traditional risk-bearing developer governance structure is still implemented under current market conditions. Empirical research did however show that this type of structure is utilised less since 2008 due to the dependence on bank loans of the traditional real estate developers. As a result, the real estate developers who operated based on bank loans have mostly disappeared. Suitability for implementing this structure, which involves two sales transactions, is deemed to be determined by the following conditions.

   The pre-conversion owner has to be willing to carry out devaluation on the book value of the asset in order to facilitate a purchase by a risk-bearing developer.

   The risk-bearing developer cannot be dependent on bank loans in order to acquire the development- and acquisition budget. In practice, this means that only private equity developers and developers partly owned by contractors would qualify for this role.

   Full project control is vital to allow the risk-bearing developer to operate and create project value through conversion. In order to facilitate this level of project control, the real estate developer has to serve as a project client and cannot operate as delegated project client. This entails that the risk-bearing developer role can only be combined with a non-risk bearing (limited liability) builder.
2. Fee developer (Figure 22)
   As a result of the perceived reduction in suitability of the risk-bearing project developer structure, the fee-development structure appeared. The fee development structure is characterised by a developer serving as an advisory consultant to a continuous asset owner. The real estate developer does not invest equity into the project and serves as a delegated project client.

   The main benefit of the fee development structure is that it allows the asset owner to retain control over the asset and the project without having to deal with the day to day running of the conversion project. On top of this, the asset owner is not forced to carry out an asset devaluation in one go prior to a sales transaction. Due to the asset remaining with the same owner, devaluation to the post-conversion book value can be carried out in stages over the course of the project.

   In terms of liability between actors; a fee development structure can only work when the asset owner takes up full liability for all activities related to the development budget. The architect, contractor (who can only serve in the Builder role) and all other advisors should be held to limited liability as stipulated in the DNR2011 and UAC1989(2012) administrative conditions.

3. Developing builder (Figure 23)
   A second addition to the governance structures is the use of a developing builder to carry out conversion projects. The developing builder structure does away with real estate developers and contains a direct contractual line between contractor and asset owner. The developing builder structure comes in two different incarnations.

   If the asset owner has limited knowledge of the conversion process or is not allowed to bear development risk, the tender can be formulated under UAC-IC2005 conditions as an integrated contract. The asset owner outsources all design responsibilities to the contractor and the contractor is most often made responsible for pre-funding the project, a governance task which is not suitable to be allocated to any other market party.

   When the asset owner wishes to exert stronger influence over the project, he can decide to bear active responsibility for the design. The asset owner puts out a tender post design completion under UAC1989(2012) conditions or proprietary turnkey realisation agreements. A transfer of ownership for the duration of the project to the developing builder is often desired by the asset owner, but contractors are hesitant to take up marketing risk for conversion projects.

Sub Question 3: What is the performance record of the types of market parties which have participated in Dutch conversion projects in a risk-bearing role since 2008?

Whether or not the market for office conversions since 2008 can be described as successful is among interview candidates. Real estate developers tend to have a more positive view than architects and contractors. The latter two acknowledge that while converting vacant assets is booming, most initiatives do not make it past the feasibility analysis.

Collaboration between actors (real estate developer, contractor and architect) is the most important driver for a positive performance record. Collaboration in conversion projects is a mixture between creativity, financial means and market knowledge. In this trilogy, creativity and financial means are described as key in-house activities, with market knowledge still being the realm of the real estate broker. There is however a shift towards less emphasis being placed upon the financial means of the real estate developer. Foreign asset owners often have sufficient financial means, but lack knowledge of Dutch real estate market. This opens possibilities for a further increase of the activities of fee developers, real estate broker and real estate managers.

In general, the performance record of actors who possess all three characteristics (creativity, financial means and market knowledge) has decreased since 2008. The perception exists that actors could benefit from being more selective and not try to do all three. This shift has resulted in fewer conversion projects being carried out using a risk-bearing developer structure.

Sub Question 4: Which project role based factors have an impact on the feasibility of Dutch office conversion projects?

A total of 10 project governance tasks regarding office conversion project were formulated in four clusters (table 23). The governance of the **regulatory requirements** is noted as being non-obstructive in the sense of causing a conversion initiative to fail. The municipal permits are however restrictive in the sense that procedures are longwinded and internal communication between pilots (Dutch term: kantorenloodsen) and permit departments is slow. This goes against the quick progress which is required in conversion projects. **Supervision** can be restrictive in relation to the feasibility of conversion projects due to a lack in trust between actors. Depending on the level of trust between the real estate developer, the asset owner, the contractor and the architect, as much as four on-site surveyors can be present on a construction site. Especially for integrated contracts and turnkey agreements, this goes against the very nature of these forms of collaboration. The positive influence of project management on the feasibility is that the actor carrying out the management task has to do so from content. Using a separate **project management** to merely supervise the process is discouraged.

The governance task **risk allocation** has an influence on the feasibility concerning the guaranteed sale post-conversion. Real estate developers note that project feasibility increases when the development plans are made without having a contracted buyer in place, whereas contractors (and development vehicles related to contractors) noted that they will only carry out risk-bearing activities in conversion projects if a buyer is secured. The real estate developers elevate the higher sale price (and subsequent profit margins) over the increased marketing risk, whereas contractors go the opposite route.

In terms of the division of **liability** between actors, the influence on feasibility can be substantial. There appears to be a trend of shifting liability as far down the production chain as possible. This results in risk-bearing actors demanding increased liability (above and beyond DNR2011 stipulations) from actors who feel to have limited ability to manage the risks related to the increased liability. As for the proportionality of increased liability towards advisors, going above and beyond DNR2011 can be viewed as disproportionate and restrictive to both advisors and clients. Contractors are perceived to be less inclined to shift liability down the production chain to advisors than real estate developers.

Sub Question 5: Which alterations to the common actor-role pairing in office conversion are likely to be of benefit to upcoming office conversion projects?

An **increase in risk-bearing involvement of the contractor** is perceived to be beneficial. This would allow conversion projects to be carried out under lower risk- and profit margins, whilst still being beneficial to the actors involved. The main benefits of having a developing builder as the primary actor in a turnkey realisation agreement, is that it allows the contractor to only take up development and realisation risk without the need for the contractor to acquire temporary ownership of the building using own equity. The emergence of BIM and its specific applicability to conversion projects is perceived to further increase the suitability of the contractor as a leading actor.

As for a **shift in governmental involvement**, municipalities are advised by the interviewees to shift focus from the creation of special initiatives (loodsen) towards improving internal alignment between initiatives and the departments tasked with reviewing and processing approvals for alterations to land use plans and approving environmental permits.

If asset owners and real estate developers feel the need to further progress along the lines of a decrease in risk-bearing involvement, the division of project roles in terms of **liability** could benefit from of a review. Such a review is pertinent on the topic of adherence to limited liability clauses and the fair distribution in accordance with proportionality guidelines of liability between advisors and risk-bearing actors. Spending less effort on securing insurance towards advisors and trying to divert liability further down the chain, as well as spending more effort on aligning liability with those actors who actually expose themselves to the related development and marketing risk. A review of the liability structure could decrease tender entrance deterrence for architects and advisors. It would also allow advisors to be selected on merit, rather than on insurance capabilities.

11.2 Unexpected Topics and Insights

Besides the topics which are clustered under the sub questions, several other topics and insights came up over the course of the empirical research.

Demand for office space

This research is limited to conversion projects. It was however noted that under current market conditions, there appears to be an increase in demand for office space, particularly in larger cities. Whilst this notion does not reduce the necessity for feasible conversion projects, it does confirm the direct effect of market conditions on the availability of suitable buildings for conversion. Especially since several respondents in the empirical research noted a preference for keeping the office function intact over converting a vacant office for budgetary- and process reasons.

Implementation of land-use plans

The usefulness of stringent land-use plans is questioned by respondents across all three interview clusters. The main insight gained is that architects and real estate developers are willing to communicate with municipalities on enforcing a less strict land-use plan (similar to Dutch term: structuurvisie) for conversion developments. The view is that stipulating functions which are not allowed for a multi-plot area, rather than the one function which is allowed for a specific plot, would speed up conversions as well as reducing the work load for municipalities.

Lack of presence of housing corporations

Under amended national legislation, the tasks and responsibilities of housing corporations have been reduced in order to steer corporations to their core task of buying and operating social housing capacity. Whereas housing corporations, according to past research, have been important developers and buyers of converted office assets, no mention of them is made at all during this research. This notion is partly explained by corporations going back to their core business. It does however result in a decrease in post-conversion ownership possibilities for converted office assets. It can also lead to a sole focus of conversion into dwellings which do not meet social-housing requirements.

Split tender

A topic which around which there is appears to be disagreement between real estate developers and contractors is the implementation of split tender agreements for realisation work. Developers appear keen to split conversion projects into smaller segments and tender each one separately. This allows developers to obtain a tender advantage on each separate agreement, but it leaves contractors with smaller margins and smaller work orders. The view of the contractors is such that they have reached a level of work (across projects and portfolios) at which they are no longer obliged to agree to any split tender work order. As such real estate developers (clients and delegated clients) have felt that the use of split tender structure is becoming increasingly less suitable.

Proportionality of liability clauses as a requirement for tender participation

Allocation of liability among project actors was defined in literature as a relevant governance task for office conversion projects. An insight which was not expected was the debate on proportionality of liability demands for DNR2011 (consultancy) government agreements. There is a debate as to whether or not increased liability demands and the subsequently required additional insurance from advisors leads to unwanted discussions between client and advisors as well as having the possibility of diminishing the openness of tender procedures. This debate is described as ongoing and not clearly defined for DNR2011 governed agreements.

11.3 Main Research Question

The outcome of the sub questions and the unexpected insights has resulted in the following answer to the main research question.

Which project governance structures and subsequent division of project roles among actors is suited for Dutch office conversion projects?

Governance in office conversion project can be carried out under a Risk-Bearing Developer structure, a Fee Developer structure and a Developing Builder structure. The Risk-Bearing Developer structure is characterised by acquisition of asset ownership by a real estate developer (client). Fee development consists of a real estate developer (delegated client) carrying out limited liability project management for a continuous asset owner (client). The Developing Builder structure consists of a main contractor (delegated client) bearing development risk for a continuous asset owner.

The main driving forces behind the decision for a specific structure are.

- If an asset owner does not want or is unable to retain ownership of the asset, only a Risk-Bearing Developer structure is applicable.
- If an asset owner wants to retain owner ownership of the asset, the Fee Developer structure and Developing Builder structure are the most suitable options.
- Allocation of the development- and realisation risk due to fiscal legislation (applicable to pension funds) determines whether or not the Fee Developer structure or a Developing Builder structure is most suitable.
- Whether or not a guaranteed sale is in place at the time of the entry decision determines involvement of either a real estate developer or a contractor. Real estate developers can bear development risk both with- and without a guaranteed sale. Contractor mention to only bear development risk when a guaranteed sale is in place.

In the allocation of projects roles, the real estate developer is suitable to serve as either a fee developer or combined risk-bearing developer/temporary asset owner. The contractor can serve as either a traditional builder or as a developing builder. The architect is noted to only be suitable to fill the designer role without a perceived necessity to expand its portfolio.

12 Interpretation of General Concepts

Besides the elements which fit within the scope of the main research question, several general concepts have come up which could benefit from further interpretation. These concepts are driven by market dynamics and corporate structure. Four topics are elaborated below. The elaborations set out in this chapter are informed interpretations by the author based upon the outcome of the empirical data and should not be taken for direct conclusions from the data.

Demand for office space

The before mentioned market dynamics in terms of an upward trend in the demand for office space could be attributed to several causes. The outcome of the Brexit vote (summer 2016) is expected to have a stimulating effect on the demand for office space in the Netherlands (especially in Amsterdam and the surrounding municipalities), but it is too early in time to pinpoint the vote as a direct cause for any increase in demand.

The simplest explanation for the increase in demand for office space in the past two years could be a direct analogy to the effects of the economic downturn of 2008 becoming less prevalent. Economic growth (or a reduction in economic decline) allows investments which were shelved during the crisis to be carried out under current market conditions. Increased market activity can in turn create a need for office space. This increased demand for office space is combined with the notion mentioned by interviewees that tenants have become more selective in terms of the location demands for office space.

One of the respondents noted that the increase in demand for office space is not so much a general trend, but very much a location related dynamic. Before 2008, the highest demand for office space was in semi-peripheral locations which are easily accessible by car and not so much by public transport. Nowadays, a higher percentage of the demand for office space is perceived to be situated in city centres. This shift clashes with the fact that most of the conversion projects since 2008 have been carried out on high-prospect locations (Dutch tem: kansrijk), which are often situated in the same city centres. For high-prospect high-demand locations, the conversion rate since 2008 could hamper the current increase in demand for office space in city centres.

Lack of presence of housing corporations

An unexpected insight which came up during the empirical research was that the lack of mentioning of housing corporations as developers and buyers of converted office space. It was not the case that corporations were actively mentioned to not be suitable post-conversion asset owners, they were not mentioned as suitable post-conversion asset owners at all.

This observation can be partly explained through the effects of shifts in legislation. In the past decade, housing corporations have been mandated under both Dutch national legislation as well as EU directives to revert to their core task of buying and operating social housing. This forced housing corporations to repel their development vehicles and seize all activities in the area of development (both new-built as well as conversions). Besides the effects of the national legislation demands on the core activity of the corporations, EU directives on the amount of social housing in relation to the total amount of housing in the Netherlands has also had an effect on the commercial activity of housing corporations as post-conversion asset owners. These directives state that the percentage of residential space being offered as social housing in relation to the total housing stock at the time was too high. This in turn reduced the necessity of the development task of the housing corporation.

Another explanation for the lack of presence of the housing corporations could be that private development companies carry out conversions for housing corporations in which market actors acquire temporary ownership. This would entail that the housing corporations agree to buy the converted asset without supplying the development budget (and thusly expose themselves to development risk). This structure would allow the corporations to stick to their core activity yet still be able to acquire social housing assets.

Willingness by actors to bear project risk

One of the drivers for deciding upon the manner in which an actor is willing (not to be confused with 'able') to take up development- and marketing (ownership) risk is the guaranteed sale. This can be observed through the desire by contractors to only partake in conversion projects with a guaranteed post-conversion sale in place at the time of the entry-decision. Real estate developers on the other hand came across as more willing to partake in office conversion without the security of a guaranteed sale upfront.

In general, contractors are project actors who operate based upon capacity. The contractor has a certain amount of people and equipment to allocate and he searches for the optimum division of resources amongst the portfolio of projects. As a result, the contractor wants to be aware of the project risks related to each project in great detail order to reach this optimum and stay within the (maximum of) 2% margin (on risk and profit) for each project. The general perception is that any tender application with more than 2% mark-up on risk and profit does not result in a successful tender bid. Real estate developers tend to operate on a smaller pool of projects at a time. Developers also have a higher tendency of operating from market knowledge and project timing. Due to the higher level of outsourcing by the real estate developer, they are also less capacity driven than contractors. The willingness of real estate developers to take up marketing risk (i.e. ownership of the asset) stems from the smaller pool of projects as well as confidence in their market knowledge (i.e. timing a project) and creativity to come up with a desirable product at the right time. Real estate developers aim to predict demand on the market and create the demand among possible project clients, whereas contractors follow the demand of the project client. This could partly explain the difference in profit margin and subsequent willingness to bear risk through temporary asset ownership for conversion initiatives.

Insurance capabilities as an unstructured tender criterion

An unexpected notion in terms of liability was that project clients are mentioned to have the desire to impose additional liability towards advisors (contracted through DNR2011 agreements) as a criterion for tender participation. This was perceived by the consulted architects as unwanted. As mentioned before, shifting liability down the production chain can eventually lead to tenders being based on insurance capabilities rather than on merit of the tender bid.

The concept of incorporating insurance capabilities into tender procedures is nothing new. In DBFM(O) (Design-Build-Finance-Maintain-Operate) public tenders by the Dutch national government, the financial interests of the (external) financier and project client are protected through the use of an LTA (Lenders' Technical Advisor). An LTA is an independent auditor who periodically evaluates the status of an ongoing project as well as the effects of the proceedings on the investment of risk-bearing actor (lender(s) or project client). Under this arrangement, the asset owner is not required to possess complete in-house technical capabilities. This allows insurance capabilities to be included in both tender as well as in design and realisation in a structured and predetermined manner. Using an LTA reduces the perceived randomness in which clients have the possibility to go above and beyond liability clauses in advisor agreements (DNR2011). On top of this, liability allocation could be treated as a fixed tender criterion rather than as an undesired side-effect, which is currently a perception among advisors.

The use of an LTA in DBFM(O) agreements works because of the continuity of the risk bearing actor (in the case of the DBFM(O) this would be a main-contractor) across project phases. With conversion projects being subjected to a more diverse pool of project clients (direct or delegated), as well as being more separated in terms of tasks and responsibilities between design, realisation and maintenance, the applicability of a structure similar to an LTA is likely to be linked to project governance structure. The developing builder structure with pre-financing by the contractor is the most similar to the DBFM(O) structure and is therefore likely to be a suitable fit for LTA implementation.

Regardless of the level of contract integration, implementing the LTA principle would require an increase in the technical knowhow (audit ability) of the insurance company or the adding of an additional advisor the already large pool. Another trade-off which has to be assessed is whether or not an individual conversion project is sufficiently large in terms of budget to justify the additional investment for implementing an LTA.

13 Recommendations

The outcome of the sub questions and main research question contains several topics on which actors could alter their approach to conversion projects. The recommendations to both the consulted actors as well as non-consulted actors are displayed in this chapter (division displayed in figure 25).

13.1 Recommendations to Real Estate Developers

The main trade-off which real estate developers have to address in order to determine their project role involvement is 'project control versus project risk'. Obtaining maximum project control can only be achieved through asset ownership, but this high-risk strategy has become the playing field a limited pool of private equity funded developers. For developers who lack this type of funding, the following recommendations are formulated.

Allow the characteristics of the asset owner to inform the decision on project governance structure

The type of ownership (institutional versus private equity and domestic versus foreign) is mentioned have an impact on the willingness as well as on the legal possibilities of an asset owner to sell a vacant office building. Being open towards working as a fee developer for specific projects is recommended. Foreign institutional asset owners with limited knowledge of the Dutch real estate market are likely to be more willing to work with a fee developer in order to obtain local market knowledge without having to relinquish asset ownership. It is recommended to approach foreign owners with an open mind as to carrying out a fee development, even though this might not be the core strategy of the developer. This step outside of the common strategy can be viewed as a trust building exercise in order to facilitate future sales.

Be realistic when determining profit margins

One of the descriptions of real estate developers is that they can be immodest when setting demands for profit margins. The risk and profit demands of upwards of 10% are perceived to be hampering feasibility. With an ever increasing presence of contractors who are willing to carry development risk at a lower premium, real estate developers are recommended to bring their profit margins more in line with actual project risk in order to be able to be competitive.

Serve as an intermediary between asset owners in area redevelopments

An upcoming issue in conversion project is that, as attention turns towards mono-functional office parks, ownership of assets is split. In order increase the chances of these mono-functional peripheral locations being redeveloped, alignment between asset owners has to be facilitated or ownership itself has be aligned. With the latter requiring one entity to obtain large scale ownership of vacant assets in the area, a focus on the first option is recommended.

Real estate brokers could serve as an intermediary, but this would mean that one broker would serve multiple owners at the same time for the same project. Having a real estate developer present as an intermediary between various institutional asset owners allows for the developer to draft project plans in order to align asset owners in the conversion process. Rather than taking up development risk through ownership, the development risk in this would entail the formulation of project plans.

Be hesitant in using split tender strategy

During the economic downturn (2008-2013), the split tender strategy was used by real estate developers in order obtain maximum tender advantage. Under current market conditions, contractors are no longer required to accept split tender structures just to keep their business afloat. The recommendation is for the real estate developer to use the main-contractor principle and allocate the risks of securing and managing sub-contractors with the main-contractor.

13.2 Recommendations to Architects

The role of the architect in office conversion has remained largely the same across project phases since 2008. Expansion of the tasks and risk profile of the architect is mentioned to be unwanted. There are however several recommendations from real estate developers and contractors towards architects.

Stronger focus on advisory role

With the emergence of BIM technology, architects are recommended to assess their position within the BIM information chain. Contractors increasingly view themselves as manager of BIM projects. This would mean that the architect morphs into an advisor for the 'look and feel' of the design. Operating as a full advisor would align with the desire expressed by the architects to refrain from taking up development risk and create a more uniform line of work for the architect from design into design supervision during the realisation phase.

Be flexible in working for multiple (delegated) clients in one project

In collaboration with developing builders under turnkey realisation agreements; architects are often required to work for the asset owner during the feasibility analysis and initiation phase and for the contractor during design and realisation. Even though the architect is only involved as a limited-liability advisor, the architect is the only actor with continuous presence across project phases. It is recommended for architects to pursue early involvement of the contractor (early assembly of project team) in order to have a line of communication in place with the contractor in order to avoid debates later on.

Focus on design works up to final design (DO)

The perception of value for conversion designs is to be created during the phases leading up to the final design (DO). In terms of creating technical drawings, it is recommended to outsource this task to a dedicated drawing bureau or to the contractor. These entities can most often do the job at a lower price point and it leaves the architect with more resources available for aiding in project initiations.

13.3 Recommendations to Contractors

The actor with the largest potential of altering or expanding its position, according to the empirical research, is the contractor. The shift from traditional builder to developing builder suits larger contractors who already own a development vehicle.

Utilise profit margin advantage

In terms of increasing feasibility for conversion initiatives, an area which does not receive a lot of attention in literature is the profit margins being used calculate tender submissions and sale quotes. In terms of the ability to run a project at a lower profit margin, contractors have an advantage over real estate developers. It is recommended for contractors to try and use this potential, which for high-budget project has a large effect on the go/no-go feasibility decision.

Supervise projects from content

BIM technology is mentioned as a strong tool of the contractor in order to obtain a central role in conversion projects. It is recommended that contractors make better use of their BIM management experience in order align and manage information streams. This type of content based project management is supported across the three interviewee clusters and is described to be especially pertinent to conversions projects in which inaccuracy of existing drawings is a larger information risk than is the case for new-built real estate of comparable scope.

Focus on obtaining work outside of tenders

Each of the consulted contractors mentioned that under the current market situation, contractors have a fully stocked portfolio of work. This allows them to be more critical when taking part in tenders. It is recommended that contractors evaluate the possibilities of pro-actively securing work in one-on-one relationships with asset owners. This provides the contractor with a higher influence on the project outcome against a better price. The key drivers for a one-on-one relationship with the asset owner are trust and an existing working relationship between the two actors.

13.4 Recommendations to Non-Consulted Actors

Besides the recommendations to the three consulted actors, several points of advice towards other actors operating within office conversion have come up. It is important to denote that these recommendations have been formulated through information gathered from real estate developers, architects and contractors and not through conversations with the respective actors.

13.4.1 Municipalities

Improve alignment between special initiatives and permit departments

Active facilitation of conversion initiatives is deemed the most appropriate strategy in which municipalities can support conversion projects. There is however a strong perception among the consulted actors that the municipality should not only focus on the special initiatives and the permit departments, but more strongly on the communication between these two departments.

Projects should no longer be approached in a manner where the special initiative (Dutch term: Kantorenloods) guides the market parties through the process, before handing over the documentation to the permit department. In plenty of cases, the permit department is perceived do the same work which has already been done again, which frustrates the process. It is recommended that municipalities only use special initiatives when alignment between departments is of such a standard that there is value added to the process.

Review of the land-use plan procedure

Municipalities are recommended to review the usefulness of stringent land-use plans in order to speed up procedure times for conversion initiatives. The current process times related to permits of conversion initiatives are perceived as too long. Implementing a structure in which function allocation is not plot specific but area specific should aid in increasing the flexibility which is required to manage conversion initiatives.

13.4.2 Institutional Asset Owners

Increase focus on keeping an asset within its portfolio

The issues surrounding the necessity of a devaluation on the book value of an asset prior to a sales transaction are still present. In order to allow for a stepwise devaluation rather than a forced devaluation prior to a sale, asset owners are recommended to shift focus towards keeping ownership of a vacant office rather than focussing on a sale.

Keeping ownership during conversion provides the asset owner with more time to bring the book value of the asset in line the post-conversion value. On top of this, the consulted real estate developers mentioned that sale projections are better for a completed conversion project when comparing the projection of devaluated vacant asset prior to conversion.

Initiate and support forward contract integration

Depending on the level of control the institutional owner wants to exert on the conversion process, an increase in the level of forward task integration is recommended. The most suitable type of forward integration is integrated contracting of design and realisation. This method requires a different approach from the asset owner concerning the tender procedure. Firstly, the asset owner has to come up with clear (SMART) functional specifications towards the contractor and not use unaltered standardised clauses for each product. Secondly, contract integration also entails that the client (asset owner) has to refrain from checking up on the contractor throughout design and realisation. Each of this notion is tied to the level of trust between client and contractor.

13.4.3 Real Estate Brokers/Property Manager

Combine brokerage activities with project management

The role of the real estate broker is perceived as useful in terms of obtaining market knowledge, but the view towards the real estate brokers solely working on facilitating a transaction is still present. It is recommended that real estate brokers not only aim to finalise a sale for a vacant office, but also have the resources to offer in-house project management, essentially making the real estate broker suitable for a fee development role. This would allow the broker to combine the elements market knowledge and creativity for institutional owners without having to invest equity into projects.

Utilise existing knowledge advantage on Operation and Maintenance

The market knowledge of the real estate broker also gives him an advantage over other market actors in terms of operation and management of asset. Brokers who carry out O&M should utilise this knowledge in knowing when to approach an asset owner. Besides, the existing relationship between the property manager and the asset owner does away with the need to build the trust between the fee developer and the asset owner. It is therefore recommended to approach conversion initiatives not from the perspective of a vacant asset, but from an operation and maintenance point of view.

14 Discussion

The research carried out when creating this report is by no means all-encompassing. In this chapter, the activities concerning the research will be critically reviewed and possibilities for further research based upon the outcome will be presented.

14.1 Reflection on Research

14.1.1 Literature Study

The literature study for this research is split up into two main segments. The first being the narrative literature used to define the research framework and the second the in-depth analysis of project roles, -actors and –governance.

The goal of the initial narrative literature study was to filter the research trigger office vacancy down to a manageable framework of problem statement, main research question and deliverables. The employed strategy of working from market data towards the conversion process and the actors involved proved to be more time consuming than I initially expected. It did however provide me a clear picture of the scope of office vacancy in the Netherlands and the dynamics of the vacancy rate between 2008 and 2013. A downside of using market data is that this strategy for problem formulation limited my view to the vacancy itself, rather than to the conversion process and the actors involved. This resulted in the initial guise of the research framework being solely focused on solving the vacancy issue. In conjunction with the graduation committee, I came to the realisation that this topic was both beyond the reach of a graduation thesis as well as being formulated too broadly.

The second phase of the literature study was carried out in more structured manner than was the case for the narrative study. A predetermined search strategy was implemented (Appendix B1 – Search Strategy Literature) on the three main topics (project roles, project actors and project governance). This allowed me to gather literature in a more methodical and logical manner. Using a search strategy also made the process of drafting conclusions and hypotheses much clearer than was the case with the initial narrative literature study.

As for the contents of the consulted literature, specific literature on project actors in office conversion projects proved to be relatively widely available. An important constraint was however that most of the literature was written from the classical point of view of the risk-bearing real estate developer, who acquires ownership of the asset and sells the asset post-conversion. The notion of fee development, in which a non-risk bearing developer serves as a process manager for an institutional investor is not yet widely present in existing literature. The empirical research displayed that the use of fee-developers is perceived as a feasible structure, especially for foreign asset owners with limited direct knowledge of the Dutch real estate market. So much so, that the responses during the empirical research pointed towards a split of the "Developer" role mentioned in literature into a "Dee Developer" role and a "Risk-Bearing Developer" role.

On the topic of contractor involvement in conversion project, the tasks and responsibilities described in literature describe the contractor as a classical builder who enters the project once the design work has been completed. Besides this, in many publications the assumption is made that conversion projects are tendered to contractor through design specifications (Dutch term: bestek). The data from empirical research displayed that contractors in the Netherlands perceive themselves as willing and able to carry out more engineering work. A shift of design and engineering responsibilities to the contractor is noted to be more suitable for conversion projects than for new-built real estate. Conversion projects are also described as better suited to BIM engineering and early contractor involvement.

In literature, a fair amount of work has gone into describing the project role "Initiator" for conversion projects. In practice, the views of the interviewees consulted for this research on the matter of project initiation are far simpler than in literature. The existence of specific "initiator" role could not be confirmed among respondents, real estate developers take up project initiation due to the fact that institutional asset owner (described as *"eigenaren van de stenen"*) are often financially better off in letting a building remain vacant. The consulted architects and contractors view themselves as being suitable in supporting the real estate developer, but initiation itself is mentioned as a specific task for the real estate developer in conjunction with the asset owner.

Another element which is often stated in literature on conversion projects is the go/no-go power held by municipalities in terms of approval of alternations to the land-use plan. Respondents partly agreed on this matter in the sense that the land-use plan procedure is a vital element to successfully building a business case for an office conversion. On the other hand, the ratio at which this process cause projects to fail is

perceived to be limited. Public law governed processes concerning environmental permits, especially for the activity of contractors are mentioned to be more of a limiting factor than land-use plan procedures in terms resulting in a project to falter or to be subject to significant delays.

14.1.2 Empirical Research

The use of expert interviews in order to uncover project roles and forms of project governance proved to be well suited to the exploratory nature of this research thesis. The main ground for using semi-structured expert interviews was that this method is described in literature as being both suitable for validating existing knowledge as well as allowing the researcher to unearth views and topics outside his own frame of reference. Looking back on the series of expert interviews, I feel that these benefits are well aligned by the research I wanted to carry out.

Over the course of the interview series, I was able to extract more unexpected topics from the conversation than was the case during the earlier interviews. This was partly down to the slight modifications to interview protocol and party down to me getting a better grip on steering the conversations into the right direction. In general, I become more confident in my own ability as the interview series progressed, this resulted in a more complete output for each interview.

Drafting the interview protocol was a two-step process. The first iteration of the protocol was directly based upon the role based outcome of the literature study. Within this protocol, little attention was paid to the effects of shifting project roles on the accountability and liability structure between the project actors real estate developer, architect and contractor. After consulting with the members of the graduation committee, I made the decision to modify the protocol in such a manner that the expected output in terms of suitability of standardised administrative conditions and subsequent liability shift would be improved. In literature, Hennink, Hutter, and Bailey (2010) support reviewing and possibly altering an interview protocol after several interviews haven taken place. Especially for unstructured and semi-structured interviews, the loss in protocol consistency is mentioned to outweigh the increase in quality of the outcome.

Analysing the recorded interview data proved to be an extensive, but useful process. The use of transcripts allowed me to not only focus on the elements which were mentioned, but also on the elements which were not mentioned by the interviewees. A downside to using transcripts is that approval of the interviewee is a strict requirement in order to accept the transcript as data. In some cases, this process took up much longer than anticipated. This resulted in some particular transcripts having to be added into the thematic summaries after completion. Even though all interviewees accepted their respective transcripts in the end, some candidates preferred to have their input included anonymously. This resulted in a slight alteration to the research methodology. In the end, all direct quotes were moved from the main research report to the appendices in order to treat to interviewees the same. Another pitfall in using transcripts is that, even with the limited number of interviews carried out for this research, the amount of recorded data becomes vast. As a result, there is a distinct risk that important passages might be overlooked during the process of synthesising the data in the within-cluster thematic summaries. I tried to address this pitfall by systematically working my way through each interview cluster one interview question at a time. Even though I tried to work at methodical as possible, a loss of data occurred during the analysis of the real estate developer cluster. This resulted in a need to go through the transcripts more than once in order to check for completeness.

14.2 Applicability of Research

The main objective of this research is to explore the allocation of project roles among project actors in Dutch office conversion projects and as such make recommendation to real estate developers, architects and contractors in order to determine their position in the current market. The recommendations are based upon the three interview clusters and form an image of the views of the consulted actors on the current and expected future market dynamics.

The recommendations in this research can aid in the decision making process in the current debate on where in the project cycle a real estate developer should hand over responsibility for the task of the design to a contractor. Another topic for which real estate developers can utilise the recommendations is to assess whether or not a specific conversion project requires a risk-bearing structure when approaching the pre-conversion asset owner or if a fee development could be more successful.

Even though the views held by the local government are not included within the scope, municipalities can still make use of the recommendations. Especially on the topic of the manner in which submissions for environmental permits are processed, the communication between special initiatives for conversion projects (Dutch term: kantorenloods) and the departments who process applications for environmental permits.

The conclusions and recommendations are based around the Dutch system or standardised administrative conditions for the construction industry (UAC1989(2012)/UAC-IC2005/DNR2011). Over the course of the interviews it became apparent that institutional asset owners utilise variations on the standardised contracts. Whilst the existence of the contracts is clear, the contents of the model contracts were not available during research. The conclusions and recommendations are directly applicable to the standardised contracts, but applicability to the variations depends on the level of adherence to the standardised version.

14.3 Limitations of Research

Even though this research is set out to be exploratory and as a result has relatively broad scope in terms of the final product, the outcome, conclusions and recommendations can only be applied within a limited context.

Generalisability of outcome

The data pool of the empirical research contains of six real estate developers, four contractors and three architects, each of the interviews lasted between 45 and 75 minutes. Even though the interviewees have been selected based upon their experience within the field of real estate development and conversion projects, this data pool is not sufficiently large to carry out statistical analysis. Direct quantification of the outcome is therefore not possible and should not be attempted. The conclusions are based upon the experiences of the interviewees in specific office conversion projects, each of the projects mentioned during interviews was situated in one the four larger Dutch cities (Amsterdam, Rotterdam, The Hague, Utrecht) and responses by the interviewees take into account the characteristics of larger municipalities (presence of office pilots, taskforces, etc.). The experiences should not be directly transferred to conversion projects in medium or small municipalities.

Completeness of data

Based upon the size the data pool, completeness of data in incorporating the full spectrum of actor collaboration in office conversions cannot be guaranteed. As for the completeness of data within the interview protocol, obtaining a useful answer to each question has been reasonably successful. When drafting the transcripts, a certain loss of data is likely to have occurred. In order to obtain approval from candidates to utilise the transcript, certain nuances had to be made and in some cases passages have been removed from the transcript. The most often mentioned reasoning behind these requests centred on the excerpts in question being true and valid, but not fit for publication on the grounds of commercial strategy. The main topic in which this occurred was the view on future collaboration between actors and which administrative conditions should be used. If I were to carry out a similar research in future, I could consider carrying out the interviews under the Chatham House Rules. This would reduce discussions on the manner in which the results can be published.
On the one hand, these occurrences led to data gaps or nuances displays. On the other hand, the requests did confirm to me that the interview setting incentivised interviewees to speak freely and honestly.

Subtopics outside of scope

Over the course of the empirical research, a number of topics came up which were not included in the scope of the literature research. In terms of technical project risks, the presence of asbestos and other hazardous materials, especially in buildings from the 1970's and earlier came up in most interviews. The rate of occurrence of this notion for risk demarcation (especially by real estate developers and contractors) would have warranted inclusion in the literature study in terms of the legislative process concerning asbestos removal.

The decision to not include an in-depth review of the operation and maintenance phase during the literature study did have a bearing on the O&M content included in the empirical research. The sole conclusion in relation to O&M which could be presented was that currently, a limited amount of attention seems to be paid by market actors to the O&M phase of conversion projects. This notion leaves a possibility for further research.

14.4 Recommendations for Further Research

This research has been carried out in an explorative manner. Therefore, the aim was to touch upon the essence of project roles and collaboration in office conversion projects. This has inevitably resulted in subtopics which were uncovered, but did not fit within the timeframe and scope of this exercise. Based upon my findings, I feel that the following topics are worthy of further academic research.

Quantification of results

In order to allow interviewees to convey their experiences within office conversion as integrally as possible, the use of transcripts and quantitative analysis was chosen. However, the perceived disagreement on the factors which characterise a successful office conversion as well as the success rate of Dutch office conversions in general between clusters does raise the following question. "What is the ratio between feasibility studies, commissioned designs and actually completed office conversions in the Netherlands?" I am very much aware that this question is broad and should be tackled for specific regions of the Netherlands to be manageable. A research of this kind would, if carried out for the timeframe since 2008, aid in either confirming or disproving the conclusions and recommendations in this report.

Possibilities for approaching conversion initiatives from an operation and maintenance perspective

The current approach towards conversion initiatives appears to be rooted in the process of the creation of a suitable product at the time of handover to the post-conversion asset owner. The perceived increase in the use of the fee-developer structure and the related notion of continuous ownership could however be a trigger for approaching the project cycle for conversions from an O&M perspective. Such an approach could involve and increased involvement of real estate brokers as well as operators. Using an O&M approach for the Risk-Bearing Developer structure is only applicable when a post-conversion asset owner is secured prior to the design phase in order to incorporate O&M demands.

Any research into the suitability of an O&M approach should be based in mapping the current O&M expertise among actors and their subsequent ability of taking up development- and/or marketing risk.

Re-evaluation of liability structure between client and consultant against professional client behaviour

Over the course of the empirical research, an unanticipated point of contention in the client-consultant relationship came up often enough to be considered significant. Under Dutch contract law, the use of DNR2011 administrative conditions is common when contracting architects and other consultants to the project. Under these conditions, the financial liability of the consultant is capped at the height of the consultancy fee (maximum of 1 million euro) or three times the consultancy fee (maximum of 2.5 million euros). The experience from the interviewees for conversion projects is that demands from project clients concerning liability in conversion projects do not align with real world consultancy fees.
This results in situations wherein consultants are required by clients to go above and beyond the maximum liability fee stipulated in the DNR2011, even for sub 100.000 fee commissions. If these exploratory findings can generalised for larger segments of the construction industry, recommendations can be made on whether or not this use of liability fees as a possible criterion for obtaining a contract is reconcilable with professional client behaviour.

Effects of BIM technology on actor collaboration in conversion projects

One of the technologies which has been mentioned in having a possible impact on project collaboration in conversion projects is BIM (Building Information Modelling). Among interviewees in the contractor cluster, views were put forward that BIM technology could possibly increase the engineering responsibilities for the contractor and reduce the design responsibilities for the architect.

Academically verifying this notion in a qualitative manner can currently only occur from the viewpoint of the contractor, since they are the sole actor to have incorporated BIM engineering beyond 3D design work. If the views mentioned on the implementation of BIM and corresponding Design and Build as well as Engineer and Build agreements are verified, this can also have spill over effects on the roles Designer and Advisor.

In-depth research of the contractor's role in office conversion projects

To my knowledge, no specific graduation research within the department Management of the Built Environment at Delft University of Technology has been aimed at uncovering the role of contractor and the manner in which the switch from "Builder" to "Developing Builder" effects the supply chain in office conversion projects. Such a research could be beneficial, since the contractor is perceived in this empirical research as the actor with the largest possibilities of increasing their risk profile for office conversions.

A research into this matter could incorporate the value appropriation of the contractor against a move from builder (fee based) to a risk-bearing developing builder role. Recommendations could aid smaller contractors in the decision on whether or not becoming a risk-bearing for conversion projects alongside large contractors.

14.5 Personal Reflection

Looking back at my own personal conduct during the graduation research process, I can conclude that the process did not meet my initial timeframe. As mentioned before, I made the informed decision to shift my research scope after the kick-off meeting. Looking back at this decision, the collective committee was right to encourage me to take this action, even though it did result in some delay.

The original planning I set out to achieve turned out to be unfeasible, even without the shift in focus. Accepting that I wouldn't be able to adhere to my goal of graduating before the summer break of 2016 was tough, but it did allow me the time to carry out the empirical research properly and included real estate developers, contractors and architects. This improved the overall quality of the final report.

I feel that the amount of literature research which I have carried out allowed me to form a clear picture on the possible division of project roles in conversion projects. For the first couple of interviews, this picture did however hamper my ability to approach the conversation with an open mind. If I were to carry out another exploratory qualitative research in the future, I would spent less time on the literature study and split the interview series into two parts. Whilst I perceive the literature review in this report as extensive and sufficiently complete, the large body of consulted literature also had a limiting effect in terms of approaching the first couple of interviews with an inquisitive attitude and an open mind. The split in the interview series would result in a first series of up to four introductory interviews which could supplement the literature review. A second series of interviews would then in turn be aimed at achieving the depth of the interview series carried out for this research.

Overview Appendices

All appendices related to this report are gathered in the document "Graduation Thesis – Appendices".

Appendices Section A: Research Framework

Appendix A1: Stepwise Refinement of Research Subject

Appendices Section B: Literature Study

Appendix B1: Search Strategy Literature Study

Appendices Section C: Empirical Research

Appendix C1: Interview Protocol Version 1 (Used in interviews R1, R2, R3 and R4)

Appendix C2: Interview Protocol Version 2 (Used in all interviews except from R1, R2, R3 and R4)

Appendix C3: Checklist Literature versus Practice

Appendix C4: Overview Interview Participants (Restricted Access)

Appendix C5: Transcripts Expert Interviews (Restricted Access)

Cluster Real Estate Developers
Appendix C5A: Transcript Interview R1
Appendix C5B: Transcript Interview R2
Appendix C5C: Transcript Interview R3
Appendix C5D: Transcript Interview R4
Appendix C5E: Transcript Interview R9
Appendix C5F: Transcript Interview R14

Cluster Contractors
Appendix C5G: Transcript Interview C5
Appendix C5H: Transcript Interview C7
Appendix C5J: Transcript Interview C8
Appendix C5K: Transcript Interview C15

Cluster Architects
Appendix C5L: Transcript Interview A11
Appendix C5M: Transcript Interview A12
Appendix C5N: Transcript Interview A13

Appendix C6: Thematic Summaries Interview Clusters (Restricted Access)

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Only the references which are directly mentioned in this report are stated below. The references pertaining to the appendix booklet are clustered in the respective document.

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