Technical Due Diligence in Sweden

The principal-agent problem: international investors and local consultants

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Abstract

International investors rely on a large number of local real estate consultants when purchasing property in Stockholm. This thesis will review these transactions and look for evidence of any principal-agent problems that arise during the due-diligence process, and specifically technical and environmental due diligence. Moral Hazard exists in the Stockholm advisory market due to incomplete contracts. Existing literature points to the fact that more complex contracts are not always the solution to the Moral Hazard problem. A better incentive structure could be designed to align the interests of the agent with that of the principal in a more complete manner. This thesis describes how technical and environmental due diligence services are procured and examines the effect of different incentive structures, including both agent and principal opinions in relation to the structures.

Firstly, it appears that international investors do not attempt to “align” the interest of the consultant with any type of incentive structure. The service is provided for a fee based on the hours the consultant spends on the various investigations. There is a strong emphasis placed on the development and communication of an agreed scope of work, but relatively little interest in assigning any significant financial liability to the consultant. The reputation of the consultant is considered to be the most important factor in ensuring that the work conducted is thorough and accurate.

A second interesting revelation is that most of the investors were not overly concerned about the written form of the contract, nor were they particularly aware of the ABK regulations. However, the local consultants are acutely aware of their liability limitations contained in this governing document. There is clearly asymmetric information in regard to the legal rights and obligations contained in the contracts. However, the investor’s belief in the consultant’s professionalism in providing the best information and service possible ensures their reputation remains intact for the long term.
Acknowledgement

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We owe a great deal of gratitude to our supervisor Prof. Hans Lind who has guided us from start to finish, always providing good advice whenever needed. We also wish to express our thanks to our interviewees, without whom we couldn’t have completed this project.

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1. Introduction

1.1 Background

The Swedish property market is attractive to international investors for a number of reasons. The market has a high level of transparency and a sufficient trading volume. The economic boom from 2004-2007 saw a great increase of cross border transactions. The local consulting market has also been increasing in both volume and level of expertise. International property advisors such as Jones Lang LaSalle and DTZ offer a full range of services to the property market. Swedish property consultants such as NEWSEC have also adopted this philosophy. These consultants offer transaction advisory, research, leasing, property management, property accounting, and valuation services.

An international investor uses several consultants when purchasing a property in Sweden from abroad. Many international investors have local offices with Swedish employees that manage their investments for them. Examples of these types of international players are Aberdeen, GE Real Estate, The Carlyle Group, and Boultbee. Others have local “partners” to provide advice in purchasing assets. These local partners can be small firms or even experienced individuals. Once the decision to invest has been made, the investor will normally enter into a Letter of Intent (LOI) with the seller. Responsible investors will conduct a detailed due diligence process during the LOI stage. This can include a legal review of the ownership status of the property, a technical review of the building and its systems, and even a financial review of tax liabilities, structuring and debt scenarios. The investor will also typically use a real estate attorney to ensure the purchase agreement gives them adequate protection and secures their rights.

The technical due diligence is of great importance to the success of the planned investment. A faulty ventilation system can have severe cost implications both in the replacement of the system as well as the loss of revenue due to tenant problems during a refurbishment. The same can be said about a faulty roof, damaged heating system, poor insulation, and other building systems. The technical due diligence is designed to assess the condition of the building and its systems and to furthermore estimate the maintenance cost of these systems during the upcoming 5-10 years. The extent of the review is defined in a contract. It is therefore very important that this contract is as detailed as possible.

It is evident that a foreign investor has a myriad of principal-agent relationships in the local market and must ensure that the local firms have an alignment of interest with their clients. The relationship between a foreign investor and a local consultant seems at first glance to be no different than if the principal was a domestic investor. However, there is typically much
greater information asymmetry between the foreign investor and the local consultant. The legal framework, market practices, and insurance liabilities can be quite different in Sweden than in the U.K., Netherlands, or Germany for example. In light of this, it is evident that alignment of interest must be carefully managed through contracts and specifically through incentives and penalties.

1.2 Objective

This paper will focus on Technical and Environmental Due Diligence contracts. It is hypothesized that the international investor will be very thorough when entering into an agreement with a provider of technical due diligence. Identifying potential structural or environmental faults could save the investor both time and money during the hold period for a particular asset. It is further hypothesized that the investor (principal) would try to provide an incentive to the TEDD provider (agent) in order to ensure their interests are aligned. Due to the relatively low price of due diligence services, it is expected that the consultant would attempt to limit their liability should a future fault arise, which was not identified during their investigation. These consultants constitute a mix of larger international consultancies and smaller local actors.

The procurement methods used are diverse and this thesis aims, through a review of cases involving technical due diligence in Sweden as well as structured interviews with both investors and TEDD consultants, to identify any evidence of a principal-agent problem. Current market practices for contracting for these services will be examined in order to try to establish if certain methods are used in a systematic way or whether more individual person-to-person solutions are more common.

1.3 Method

To determine the existence of the Principal Agent problem in the contracting for Technical Due Diligence services, the authors first conducted a review of the Principle Agent Theory. Additionally, the existing practices in the market and existing contracts were reviewed. Potential problem areas were identified and a questionnaire was created for interviews with market participants. Discussions were held with both international investors and local due diligence providers to determine their opinion and attitudes regarding selection, contracting, reporting, and payment of due diligence services in the Stockholm Market. Interviews were conducted with directors and vice presidents of major international property investors doing business in the Nordic countries. These investors were mostly headquartered in London but represented international real estate investors with European property funds. Also interviewed was a Sovereign Wealth Fund which chose to remain anonymous. All investors have done business in the Nordics in recent years and specifically in Sweden.
The individuals interviewed were at a more senior level and had direct experience with due diligence during transactions. Interviews were also conducted with managers involved in and responsible for providing technical due diligence services within two large well-known engineering consultancy firms operating in Sweden. These providers were all Stockholm-based but formed part of a network of expertise with the area of technical and environmental due diligence. The individuals interviewed have worked at both strategic and operational levels for several years during the past five years.

Both authors are active participants in the Stockholm Real Estate Market with significant experience in both investment in property and technical and environmental due diligence. One author works at an investment firm and has purchased technical consulting services throughout his career in real estate. The other author works as a consultant providing technical due diligence to property owners. In addition to the referenced interviews, the authors have had many conversations about TEDD and contracting methods with colleagues and other members of the real estate branch in Stockholm over the past few years. Consequently, the results of the interviews were then analyzed along with the insights and experiences of both authors to provide a deeper understanding of current market practice.

1.4 Structure

Chapter 2 begins with an overview of international investors operating in the Swedish market and a general review of the real estate market in Stockholm.

Chapter 3 describes the real estate consultancy market in Sweden and includes a brief description of the various services within the property transaction area which form part of a typical due diligence process. An extract from a technical due diligence report shows how technical findings are normally reported.

Chapter 4 follows with a review of existing knowledge of Principal-Agent theory and an examination of how the theory will be examined in relation to the technical and environmental due diligence contract.

Chapter 5 describes the Technical & Environmental Due Diligence process.

Chapter 6 explains how consultants are selected.

Chapter 7 explains how contracts between consultants and investors are designed.

Chapter 8 deals with how consultants are compensated.

Chapter 9 explains how product quality is guaranteed, thereby avoiding moral hazard.

Chapter 10 presents the results of interviews carried out with both investors and consultants.
2. International Investors and the Stockholm Market

There are several types of international investors active within the Stockholm property market. Institutional investors from foreign pension, insurance or sovereign wealth funds also use a variety of ways of investing in real estate. There are several pan-European real estate funds which are managed from offices in London, Paris, or other major cities. These funds often have a responsible asset manager which must then travel to Stockholm and make the decisions on which consultants to hire. Indirect investing in Europe is being done through non-listed real estate vehicles. These vehicles grew in popularity during the boom cycle.

According to an INREV survey, 57 billion Euros were invested across Europe between 2004 and 2009. During 2009, investors committed to invest 5.9 billion Euros. This was down from 14.8 billion Euros raised in 2008. (INREV Capital Raising Survey)

According to the NEWSEC Property Outlook, Spring 2010, “international investors have significantly reduced their activity in Sweden and their share of the 2009 transaction volume was only 11%, compared to 25% in 2008 and almost 60% in 2007. The main investors in 2009 were equity-financed property companies, low-leveraged funds, institutions, municipal housing companies and family-owned property companies.” This reduction in both total transactions and the percentage of international investors is not surprising as lending practices have tightened and investors have felt the effects of the downturn.

2.1 Current Market Participants

The following international investors have participated in major transactions over the past few years: Deka, GIC, LIM, Keops, GE London, CLS holdings, Boultbee, Curzon, Merrill Lynch, Whitehall Funds/Goldman Sachs, Landic, KFH (Kuwait Finance House), Blackstone Group, and GE Real Estate. This is not an all-inclusive list, but simply mentioned to give a frame of reference of the variety and significant presence that the international investor has in the Stockholm real estate market. The adjacent chart from NEWSEC shows the largest foreign property owners in Stockholm at this time.

The total transaction market in Stockholm has decreased by over...
60% between 2008 and 2009 due to the financial crises (JLL). The transaction volume is expected to increase in 2010 and 2011.

### 2.2 Stockholm Property Market

Stockholm has the largest property market in the Nordic countries with approximately 12 million square meters of office stock and 1.5 million square meters of retail. Stockholm has higher population and economic growth than the rest of Sweden, representing almost 30% of GDP (DTZ). Prime office rents in Stockholm range from 3200 SEK/sqm to 3800 SEK/sqm while prime retail rents range from 6000 SEK/sqm to 12,500 SEK/sqm. (Newsec). In reaction to the economic downturn, vacancies have been increasing in the office segment from around 10% up to an estimated 13%. Rents have decreased but the JLL property clock currently estimates that they are bottoming out.

The recovery of the property market will be closely tied to the macro economy in Sweden but also in Europe. Yields have risen on office stock in central Stockholm but are seen to be levelling off as can be seen in the following chart from NEWSEC:

**Table 2- Office Yields, Stockholm**
The prime rent and vacancy rate shown below represent the fall-out up to 2008, with forecast trend for 2009. Prime rent is for Central Business District (CBD) Stockholm.

**Table 3- Prime rent/vacancy rate, Stockholm**

![Prime Rent and Vacancy Rate Graph](image)

Below is an overview of the Stockholm market broken down by submarket including CBD, rest of inner-city, adjacent suburbs, Kista and Solna/Sundbyberg. Figures shown include forecasts for new space (completions) as well as current vacancy rates, rent levels and yields.

**Table 4- Office Market Data, Stockholm**

<table>
<thead>
<tr>
<th>Office Market Data</th>
<th>CBD</th>
<th>Rest of Inner City</th>
<th>Adjacent Suburbs</th>
<th>Kista</th>
<th>Solna/Sundbyberg</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q4 2009</td>
<td>1,704,000</td>
<td>3,394,000</td>
<td>1,709,000</td>
<td>852,000</td>
<td>1,615,000</td>
<td>11,119,000</td>
</tr>
<tr>
<td>Total Est. Completions 2010 (sq m)</td>
<td>40,000</td>
<td>36,000</td>
<td>8,000</td>
<td>67,000</td>
<td>17,000</td>
<td>168,000</td>
</tr>
<tr>
<td>Total Est. Completions 2011 (sq m)</td>
<td>7,000</td>
<td>29,000</td>
<td>34,000</td>
<td>5,000</td>
<td>24,000</td>
<td>99,000</td>
</tr>
<tr>
<td>Total Est. Completions 2012 (sq m)</td>
<td>51,000</td>
<td>96,000</td>
<td>64,000</td>
<td>39,000</td>
<td>85,000</td>
<td>335,000</td>
</tr>
<tr>
<td>Vacancy Rate (%)</td>
<td>6.5</td>
<td>10.2</td>
<td>13.9</td>
<td>10.5</td>
<td>11.5</td>
<td></td>
</tr>
<tr>
<td>Short-term forecast (---)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prime Rent (SEK/k/sq.m.p.a.)</td>
<td>3,700</td>
<td>2,900</td>
<td>1,900</td>
<td>1,800</td>
<td>2,000</td>
<td>-</td>
</tr>
<tr>
<td>Short-term forecast (---)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rent – Grade B properties (SEK/k/sq.m.p.a.)</td>
<td>2,600</td>
<td>2,100</td>
<td>1,400</td>
<td>1,050</td>
<td>1,500</td>
<td>-</td>
</tr>
<tr>
<td>Short-term forecast (---)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prime Yield (%)</td>
<td>5.75</td>
<td>6.25</td>
<td>6.75</td>
<td>7.25</td>
<td>6.75</td>
<td>-</td>
</tr>
<tr>
<td>Yield – Grade B properties (%)</td>
<td>6.00-6.50</td>
<td>6.75-7.25</td>
<td>7.25-7.75</td>
<td>7.75-8.50</td>
<td>7.25-7.75</td>
<td>-</td>
</tr>
</tbody>
</table>

*All including submarkets not presented

Source: Jones Lang LaSalle

While the current status of the Investment Market is not the focus of this thesis, this brief overview is given as a reference to show the scope of the Stockholm market. Principal-agent problems exist in both up markets and down markets. The authors make the assumption that, following a tough economic downturn, investors will be even more diligent in their transactions and in their contracts with local advisors. At the time of writing, the most active international investors on the market were unlisted German funds (JLL).
3. **Stockholm Real Estate Consultancy Market**

To understand the current status of the consultancy market in Stockholm one must review the past few decades. The global economic downturn at the beginning of the 1990s affected, among other things, property prices which were already overvalued. This downturn affected companies significantly and forced them to cut costs in order to remain competitive in the market. Personnel were, and still are, one of the largest expenses for companies and it was there that the first cost reductions were made. The subsequent reorganisations included a review of the in-house activities of corporations. Real estate functions were streamlined or completely out-sourced to external consultants. These consultants came from many different disciplines and many were former employees that had set up these new consultancy practices. This makes the real estate consultancy business a relatively new phenomenon in Sweden. The sharp upswing in real estate values from 2004-2007 also encouraged skilled employees of the major consulting firms to go out and establish new firms.

The recent crises have meant that, among other things, a further wave of cost-efficiency measures – made possible in no small way by technological developments that have revolutionised how and where we can work. This time around, however, the treatment of property as a financial instrument – how property is valued, how it is transacted - has come much more into focus. The slowdown in the real estate market has meant staff layoffs and reduced services from some consulting firms. However, the overall effect of the large inflow of foreign investment into the Stockholm region from the past decade has meant an increase in knowledge and level of sophistication.

3.1 **The internationalisation of property markets**

The main factor that has lead to the internationalisation of property markets is the gradual globalisation of the economy. Claudio de Magalhães (RICS 1999) states that it was the deregulation and globalisation of financial markets from the 1980s onwards that led to the formation of international property markets. This, in turn, led to a demand for international consultancy firms by these global corporations. This formed the necessary support framework in providing international users of real estate standardised practices and methods in the countries that they choose to locate their operations. Perhaps the most important factor of all is that, as part of the new global economy, property has also become a globally traded asset.

3.2 **Market maturity**

Property markets are partly analysed in relation to how mature they are. This “maturity” is a function of the degree of diversification of user and investor opportunities, flexibility of adjustment of property interests, market openness, the existence of information and research systems, professionalism and standardisation of property rights and market practices. The
Swedish market displays these characteristics and physical evidence of this can be found in the number of successful international investors who conduct business in Stockholm.

### 3.3 Overview of property consultancy services offered

The increase in demand for real estate in Sweden has lead to consultancy services being more highly valued and in greater demand. Of all the Nordic countries, Sweden is the largest property consulting market. Property companies can enlist the help of a consultant in sales and purchase transactions, valuation, letting and property management, if these services are not performed in-house. There has been a growing trend for Swedish institutions to outsource nearly all property-related business areas to a consultant, with the exception of the portfolio management and allocation process. International investors may use many or in some cases all of the services that a consultant offers, as they often do not keep an office in Stockholm. This may start with market research and valuation services, followed by transaction, then lettings of the property, and then the eventual management of the property. Swedish corporations use services such as transaction and letting as well as tenant representation and valuation.

The consultants that offer real estate related services have entered the market in a number of different ways; mergers, acquisitions, established Swedish firms, government departments and partnerships or alliances. The consultancy market in Sweden has both domestic and international firms, though the players on the market are changing and new entrants are appearing. Corporate real estate services are becoming more highly valued as outsourcing of non-core business operations continues. At the same time as many consultants are broadening their range of services to become so-called “full service providers”, some consultancy firms are decreasing the amount of services they offer and becoming niche players. The services offered by consultants can generally be placed into one of five main business areas: property valuation, investment sales and acquisitions, leasing, property and asset management, and corporate services. This study focuses on the principal-agent problem for buyers and sellers of technical and environmental due diligence services in connection with property transactions.

### 3.4 Investment sales and acquisitions

Whether the sale or acquisition of a single-asset or a large portfolio, consultants dedicated to the transaction process use their financial and real estate knowledge to achieve the optimum price, a speedy transaction and certainty of closing a deal.

These sales specialists have a keen understanding of capital markets and real estate – as well as the buyers and sellers involved in transactions. They calculate an asset’s value and market it among an appropriately selected group of potential buyers. The dominance of international
firms in this area of the property consultancy market is due in no small part to their ability to expose a property to as many potential buyers as possible. They can take advantage of both local market knowledge as well as international contacts within real estate capital markets, and very often draw on additional in-house expertise in commercial real estate strategy, leasing and asset management.

A typical scenario is where the consultant (the agent), following an appraisal of the specific sales assignment, recommends a marketing strategy with clear transaction procedures and timetable to its client (the principal). The property is then marketed over a number of weeks and several bids are received. The investor with the highest bid receives a short exclusivity period in order to carry out in-depth studies of the property – often referred to as due diligence. Thereafter, negotiations are carried out and agreement is reached regarding the deal within the timeframe.

Fees for this type of service often involve a fixed percentage of the purchase price, making it a lucrative source of income for successful consultants. There are of course risks where agreements between principal and agent with “no deal, no fee” clauses are not uncommon. In view of the intensive nature of such transactions, relatively high internal costs can be incurred, especially in the larger international firms - with their larger overhead costs – as well as the fact that this specific business area is naturally sensitive to changes in the larger national and international economy which have a direct knock-on effect on the volume of property transactions.

### 3.5 Due diligence

Due diligence is a term used for a number of concepts involving either the performance of an investigation of a business or person prior to signing of a contract, or the performance of an act with a certain standard of care. A common example of due diligence in various industries is the process through which a potential acquirer evaluates a target company or its assets for acquisition.

#### 3.5.1 Overview

The term "due diligence" first came into common use as a result of the United States' Securities Act of 1933. The US Securities Act included a defence referred to in the Act as the "Due Diligence" defence which could be used by broker-dealers when accused of inadequate disclosure to investors of material information with respect to the purchase of securities. So long as broker-dealers exercised "due diligence" in their investigation into the company whose equity they were selling, and disclosed to the investor what they found, they would not be held liable for non-disclosure of information that was not discovered in the process of that
investigation. The entire broker-dealer community quickly institutionalized, as a standard practice, the conducting of due diligence investigations of any stock offerings in which they involved themselves.

Originally the term was limited to public offerings of equity investments, but over time it has come to be associated with investigations of private mergers and acquisitions as well. The term has slowly been adapted for use in other situations. In business transactions, the due diligence process varies for different types of companies. The relevant areas of concern may include the financial, legal, tax, IT, environment and market/commercial situation of the company. Other areas include intellectual property, real and personal property, insurance and liability coverage, debt instrument review, employee benefits and international transactions.

Persons involved in buying, selling, lending, and managing of commercial real estate routinely need to perform a variety of types of commercial property due diligence. Offers to purchase an asset are usually dependent on the results of due diligence analysis involving an investigation or audit of a potential investment. Due diligence serves to confirm all material facts in regards to a sale. This includes reviewing all financial; tax, legal, technical, and environmental records as well as anything else deemed material to the sale. Generally, due diligence refers to the care a reasonable person should take before entering into an agreement or a transaction with another party. An international investor must rely on a large number of local consultants to perform this due diligence. The various constituent parts of this service are further defined below:

3.5.2 Financial due diligence

This is focused on financial data made available by the seller which allows the potential buyer to examine financial statements containing details of any debts, security interests or investments. Analysis of existing tenant leases is required in order to be able to assess the underlying value of the property in question. This work is usually carried out by accountancy firms.

3.5.3 Legal due diligence

It is also important to confirm the current zoning law in relation to the property and thereby confirm its compliance with the relevant building codes. It is also common for due diligence in a commercial property transaction to include a confirmation of the ownership deeds of the property and any duties or limitations to which it is subject – for example, rights of way for statutory authorities or any long-standing agreements with neighbouring property owners. Analysis of existing tenant leases and their legal transferability to a new owner is required as
is the necessity to highlight any ongoing or pending litigation. This work is carried out by a locally registered law firm.

### 3.5.4 Tax due diligence

This is intended to assess actual and potential tax liability based on information from the seller relating to how the property holding company is structured. Checking previously lodged tax returns is also included as well as investigating if any further strategic or structural changes to the company that would optimise the property’s overall tax position. This work is usually carried by specialist tax consultants or accountancy firms.

### 3.5.5 Technical & Environmental Due Diligence

A property condition assessment is also very common and includes a review of an object’s buildings and surroundings as well as building services in order to evaluate the cost of deferred maintenance items that can materially affect the operation and value of a property.

Report findings often consist of a cost table showing the immediate and necessary future repairs and their associated costs, along with a general description of the current condition of the subject property. For example, such a table may highlight the fact that within 2 years the facade will require painting and that, during then coming 5-year period, parking areas will need resurfacing. These reports are useful for negotiating the price of a property as well as for future maintenance planning and budgeting. Environmental due diligence during commercial real estate transactions can include so-called Phase I desktop and Phase II site assessments. Such assessments are undertaken in order to highlight and evaluate the presence of any deleterious materials in buildings or hazardous substances in the ground for which the purchaser would become liable upon completion of the transaction. This work is usually carried by engineering consultancy firms.

### 3.5.6 Major Providers

The local consultancy market is well developed in Sweden. Transaction advisory is conducted in the market by Catella, CB Richard Ellis, Cushman & Wakefield, Colliers, DTZ, JLL, and Leimdörfer as well as NAI Svefa. Asset management services are provided by a number of local consultants as well as the larger companies such as Aberdeen and Newsec. These and many others provide expertise to both domestic and international investors. Technical & Environmental Due Diligence services are offered by engineering consultancies such as Grontmij, Ramböll, Structor, Sweco and Watts as well as WSP.
3.5.7 Development of the Swedish consultancy market

A more historical perspective of the development of the Swedish DD market was garnered from an interview with a former Head of Asset Management for an international real estate investment fund from 1997-2003. He found that conducting a thorough due diligence on a property in the late 90s was sometimes unnerving to sellers. The local providers were also not used to the in depth scope of work and reporting requirements. However, international service providers such as WSP were entering the Swedish market and bringing their best practices to the local offices. In his experience, the legal and tax due diligence quickly rose to a level expected by international investors, while the technical due diligence was slower to develop.

The manager from the Sovereign Wealth fund also stated that good technical due diligence providers were the hardest to find of the due diligence providers. This can potentially be attributed to the locally based education. This interviewee also confirmed the model of having a regional expert in technical matters. One investor had an individual based in the United States that would handle reviewing scope of work and reports for technical and environmental due diligence in Sweden. This Head of Asset Management continued working with international investors in the Swedish Real Estate Market from 2003 to 2009 and is now working in real estate investment with local investors. He feels that because of the recent financial crises, the role of due diligence will increase for international investors. This sentiment was also voiced by a Vice President at another international property fund. Investors are increasingly nervous about risks and do not feel that rising capital values will cover any technical faults that were overlooked during the due diligence process.

The level of importance given to the technical due diligence reports varies from investor to investor. The Head of Asset Management stated that his company took the results very seriously and scheduled maintenance and further investigations to cure and problems found during the investigation. He stated however, that some investors tend to use the results of the investigation as a negotiation point when the market permits. During the real estate boom of 2005-2008, investors were not able to push down prices due to potential technical faults (Head of Asset Management). There are several due diligence providers who have overlapping scopes of work and it is important to coordinate who investigates what so that one does not pay twice for the same service. This is particularly true when it comes to tax and legal due diligence (VP).
4. **Principal-Agent Theory**

Academic research has been carried out to analyze many different types of contractual relationships. This field consists of the broad topic of contract theory, or principal-agent theory. This theory is used as a framework to analyze the actions of consultants in Stockholm and international investors.

**4.1 Applied Principal-Agent Theory**

The principal-agent problem is generally defined as a situation of conflicting interests where the two parties have different levels of information. “The most simple principal-agent relationship consists of two people, where one of the parties contracts with the other to perform a certain task” (Hendrikse 2003). There are three common ingredients in a principal-agent model. These are defined by Hendrikse as the existence of an available surplus, a conflict of interest, and asymmetric information. An available surplus occurs when it is possible for the agent to make money on the transaction. This is the case with local consultants.

Asymmetric information occurs in a number of ways. The agent has better information regarding the amount of effort they perform (Hendrikse 2003). In the case of a local consultant working for an international principal, there is a great deal of asymmetric information. In Anglo-Saxon culture, the contract is a very strong tool that governs the relationship between the parties. It is this contract which is scrutinized if problems arise between the two parties.

In Sweden, there are several established standards which govern relationships between principals and agents. Examples of these are AB and ABT which are the two standard forms of construction contract as well as ABK which is used for engaging consultants. Furthermore, should disputes arise and matters arrive in the court system, local market practices are considered. If a principal is not familiar with the relevant framework under which Swedish consultants or contractors work, they can misconstrue their rights and the consultant’s liabilities under Swedish law.

Anglin and Arnott (1991) point out that there are two types of asymmetric information. “The first is called hidden action or moral hazard. Here the principal is unable to observe, at least completely, all actions taken on his behalf by the agent.” The second type of hidden action is adverse selection. In this problem the principal does not have complete information regarding the expertise of the agent (Anglin 1991).

It is the moral hazard problem that will be examined by this paper. The local consultant typically does not see the international investor on a frequent basis and performs its tasks unobserved. Technical and environmental due diligence is carried out over many hours on-
site. The level of effort and thoroughness is often dependant on the individual’s understanding of the scope of work. Furthermore, a high level of information asymmetry can exist when a foreign investor assumes that the legal framework they are used to applies in Sweden.

4.2 Existing Body of Knowledge

A variety of authors have examined the principal-agent theory over the past 30 years. These authors have worked to explain contracts in many different situations (Anglin 1991). Chau and Ng, of the University of Hong Kong, used the agency theory to examine the relationship between lenders and mortgagors in foreclosure sales. They found that the bank as principal was motivated to sell the property as quickly as possible to recover their loan. This contrasted with the desire of the property owner to get as high a price as possible (Chau). They cited an interesting comment from Mitnick in *Ethics and Agency Theory* (1992) that the principal-agent relationship by design creates opposing objectives. They found that foreclosed properties in Hong Kong are sold at a 10% discount in an up market. Their study points to the fact that when a moral hazard problem exists, often the principal can lose property value. Yet, principals still choose to engage agents for the lease or sale of real estate for a variety of reasons.

The “decision framework” has been studied (Fassina, 2002) to help explain why principals engage agents and under which terms they choose to do so. Fassina made a clear distinction between direct and representative negotiation, and the level of authority allocated to the agent in each type. “If a principal grants too much authority, an agent is likely to initiate a negotiation that will result in a minimally acceptable deal. (Fassina, 2002)” This statement supports the thought that an agent is risk averse and would like to sign a deal that would be accepted so the agent can be paid a commission. The agent is not negotiating the best deal for the principal, but rather the deal that ensures the agent will receive a commission. To apply this to the consulting market in Stockholm, one must consider the current models of contracts available to property owners, and the incentives structures that exist.

4.3 Incentives

A closely related study of the Principal-Agent Theory in the Stockholm market was carried out in 2005 by two students and The Royal Institute of Technology. Frida Andersson and Jenny Hansson examined the Principal Agent Theory in respect to the real estate transaction process. They used their study to determine “why investors engage agents; how the agents are selected and which are the decisive factors underlying the decision (Andersson 2005). They found that agents are often engaged to increase exposure of the property to the market in order to create a competitive environment for the sale of the asset. In the Stockholm market, knowledge was one of the most important factors when a principal selected an agent.
Andersson and Hansson concluded that “There are several ways for the investors to deal with the problem, but the most effective way to motivate the agent and counteract Moral Hazard are the use of incentives, especially the financial kind (Anderson 2005: 83).” They imply that more complete contracts are not necessarily the answer to the Moral Hazard problem. Instead, they point to aligning the interests of the two parties through financial means in a more conclusive way than is currently being done.

The idea that more complicated contracts may not solve the problem was examined by Anglin and Arnott as well. They examined the contract between a house seller and his agent. They found that the standard principal-agent theory fails to account for the fact that they more complex a contract is, the harder it is to enforce. The enforcement efforts could be costly, thus negating the positive effects of writing a complex contract. “The commission contract appears to perform poorly: it fails to allocate risk efficiently or to provide appropriate incentives for agents (Arnott, 1991:120). Again, the idea of incentives is referenced in the body of literature dealing with Moral Hazard problems.

The existing types of contracts and incentives used for Technical & Environmental Due Diligence will be analyzed in this paper.
5.  Technical & Environmental Due Diligence

The growth of this relatively new business area is primarily due to the increased risk to which businesses, including property owners, have been exposed following developments in relation to environmental legislation during the latter part of the 20th century.

In requiring businesses to take into account the potential risk to individuals, these new statutory obligations created a demand for assessments of specific environmental hazards in order to avoid liability under the new legislation. In the U.S. demand increased dramatically for this type of study in the 1980s following judicial decisions related to the liability of property owners to effect site cleanup. Interpreting the CERCL (Comprehensive Environmental Response, Compensation and Liability) Act of 1980, the U.S. courts have deemed that a buyer, landlord, or lender may be held responsible for remediation of hazardous substance residues, even if a prior owner caused the contamination; performance of a Phase I Environmental Site Assessment, according to the courts’ reasoning, creates a so-called safe harbour, known as the 'Innocent Landowner Defence' for such a new purchaser or his lenders.

The technical side of this consultancy service which concentrates on building systems has developed as environmental assessments have identified a spectrum of risk that is much broader than that which is solely related to an environmental hazard. This work, in concentrating largely on a property’s improvements, i.e. building components, seeks to describe the object in terms of its current condition, use and overall technical standard. This information provides a basis for comparing the subject property’s improvements with the improvements typically seen in the subject property’s market segment.

5.1  Technical & Environmental Due Diligence - the typical process

Carrying out a typical Phase I environmental assessment in Sweden involves mainly looking at historical information related to the property in question. This inventory is carried out exclusively as a desktop exercise i.e. no physical site work is included such as testing materials taken from the ground or buildings. This inventory aims to provide a reliable level of information on which to make a decision in relation to whether further tests or inspections are carried out, or as a basis for classifying the relative risk of any potential environmental hazards. Such work is entirely dependent on the quality of information available at the time of the assessment – both within statutory bodies who regulate property matters and are the main providers of information for a Phase I environmental assessment, as well the current owners and their management. In Sweden the high degree of transparency in relation to access to such information helps to ensure that environmental assessment work is value-adding and therefore worthwhile for all parties.
A purely technical due diligence assignment focuses on three technical areas – building structures and materials, mechanical services and electrical installations. The work consists normally of three phases:

1. Desktop analysis of available information such as drawings and specifications, operation and maintenance manuals and records, energy consumption information as well as carrying out a search in the property cadastre in order to confirm or highlight the technical aspects of the property’s legal status in relation to current municipal development plans or rights of way for third parties.

2. Site inspection of the property covering buildings and surrounding ground conditions, as well as the mechanical and electrical installations. This is intended as a means of confirming information initially received during the desktop phase although, due to the uneven and unpredictable quality of such information, the site inspection can very often form the most significant part of the entire exercise in determining the current state of repair of the subject property.

3. Analysis of information received during the initial desktop phase and that which was actually seen on site during phase 2. From this a written report is issued by the technical consultant, providing an appraisal of the subject property based on the information received and subsequent observations on site. As well as giving an overall rating of the current state of repair of buildings, building services and external areas an estimate is calculated for so-called deferred maintenance works.

Costs for deferred maintenance represent an estimate, at the time of inspection, of the cost of repairing both natural and unnatural physical deterioration of the subject property. This can involve the cost of restoring neglected items of work at the property e.g. essential heating or electrical services that do not work, windows broken due to vandalism, or other visible repairs that should be carried out in the immediate future in order to restore the intended functionality of the premises.

As well as these obvious items of work, attention is also given to the individual materials and systems within buildings that have a more or less definite technical lifetime. Everything within the fabric of a building has of course its own technical lifetime e.g. a reinforced concrete structural frame may have a design life of 100 years. This doesn’t imply that the walls will cave in at that point in time but it is an important piece of information when assessing the cost of physical deterioration of a property, and which ultimately affects the value of a property at any point in time.

Similarly, the age of a particular building element or installation, such as the roof covering or the heating plant, plays a very direct effect in estimating the possible cost of deterioration for the subject property. If, for example, the heat exchangers in a heating plant room have a
lifetime of 25 years and they are 20 years old at the time of the due diligence inspection, then it is reasonable to assume that this item will need to be replaced in 5 years’ time. This assumption is made in order to maintain the standard and intended function of the property – if it is not carried out when it should be in accordance with widely-known and accepted information on the technical lifetime of heat exchangers for heating systems, then the landlord runs the risk of the system breaking down and potentially having tenants without any heating, possibly in the middle of the winter. Assuming that the landlord is a serious and rational property owner it is logical to assume that he or she will change the heat exchangers when they should be replaced. This cost is therefore included when estimating the overall impact of such work on the operating cost, and ultimately the value, of the property. It is normal in Sweden to assess such costs over a ten year period, and thus align with the timescale used for valuing property using, for example, the discounted cash flow method.

While the technical due diligence report contains a large volume of information describing the quality of the subject property from a technical point of view it is, in practice, this quantitative part of the report which invariably draws most attention in going forward with the transaction process. The costs for deterioration or deferred maintenance as described above while not tangible at the time of the due diligence report give a good indication for a prospective buyer of potential defects that can lead to tangible costs at a later stage.

The findings contained in the technical due diligence report provide a means for creating room for negotiation using information which is gathered according to accepted standards for property transactions, and which is produced in a transparent and systematic manner. The discovery of additional costs and risks in the building does not automatically result in a reduction of the purchase price. However, it does give the investor a better understanding of the upcoming capital improvements needed in the building, and thus better information when deciding if the negotiated price is appropriate for the purchase of the building.

While the primary use for the information gathered is to assist in the specific transaction, the technical due diligence can also provide a foundation on which future maintenance planning can be built. This is not the specific subject matter of this thesis but is an area worth investigating further in view of its potential to provide value, especially to new incoming landlords whose core business is not owning or managing property on an object-by-object basis.

The following report extracts give examples of such potential costs for the coming 5-year period that a potential investor should take into account. This example is for a retail centre in the Stockholm area. In this particular case, there were relatively few items identified, and the investor was able to incorporate these costs into the budget for the property. Once the decision to purchase the property was made, the investor carried out a more detailed maintenance plan and scheduled these items of work as part of the operating expenses for the property.
In addition to these identified costs arising due to deferred maintenance, a typical report contains information on the current state of repair of the building fabric and building services, even if there may be no cost items specifically identified. This is intended to give the investor a better understanding of the property’s current status, and to even highlight other potential costs, while possibly not relevant for the transaction at the time of reporting, but which should be monitored and follow up on in the medium to long term. The table below shows a building which was relatively new and had no major issues. This excerpt is a small part of the overall report:

**Table 5- Example from actual TEDD report**

<table>
<thead>
<tr>
<th>Issue</th>
<th>Estimated Costs in kSEK (rounded)</th>
<th>Immediately</th>
<th>Medium-term</th>
<th>Long-term</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outdoor Areas</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The loading area needs a new asphalt paving</td>
<td></td>
<td>20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Building Regulation</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of documents</td>
<td>non material</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Property Condition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New bitumen membrane roof covering</td>
<td></td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>New asphalt paving</td>
<td></td>
<td>-</td>
<td>20</td>
<td>-</td>
</tr>
<tr>
<td>Repairing of industrial door</td>
<td>non material</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Technical Installations</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Partly rolling of waste water system</td>
<td>50-200</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Cage door in elevator</td>
<td>-</td>
<td>100</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Lack of inspection protocols</td>
<td>non material</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Fire Prevention</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No issues identified</td>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Environmental Issues</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asbestos</td>
<td>100</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total Costs (material)</td>
<td>150-350</td>
<td>240</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Table 6- Findings table from actual TEDD Report**

<table>
<thead>
<tr>
<th>Prio</th>
<th>Key Issue</th>
<th>Description</th>
<th>Recommendations</th>
<th>Cost Est. (kSEK)</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>OUTDOOR AREAS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exterior features and parking areas</td>
<td>The property covers a total surface area of about 73,000 m², mostly covered with asphalt for driveways and parking areas. There are some 1400 parking lots at the property. There are some small areas with lawn, trees and bushes. Around the entrance area there are concrete paving. In general, exterior facilities were observed to be well maintained.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Foundation</td>
<td>Foundations by concrete slabs on ground of broken rock and partly concrete slabs on ping. Some cracks in concrete slabs have been observed during inspections, in connection with dilatation joints located in the storage rooms.</td>
<td>According to the superintendend the cracks appeared early and have not increased in size. The cracks do not require any corrective measures and the floor is overall in good condition. The latest inspection protocol is not available.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Framework and facades</td>
<td>General framework of steel. Facades of metal sandwich panels.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
The length of an assignment involving one single property in Sweden is usually measured in days, although the actual due diligence process may continue for a number of weeks following the delivery of the technical due diligence report. It is not uncommon that a question and answer period, which usually forms part of the technical due diligence work, follows the issuing of the TEDD report to the other party. In some cases, physical meetings or tele-/video conferences are also held, depending on the time available. A complete sample TEDD report is contained in Appendix 3.

5.2 TEDD - the major service providers in Sweden

Technical and Environmental Due Diligence (TEDD) service providers in the Swedish market today are predominantly made up of the consultancies listed in the table below:

<table>
<thead>
<tr>
<th>Company</th>
<th># emp.</th>
<th>Turnover (TSEK)</th>
<th>Headquarters</th>
<th># countries</th>
<th># employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWECO</td>
<td>5 082</td>
<td>5 338 700</td>
<td>Sweden</td>
<td>11</td>
<td>5100</td>
</tr>
<tr>
<td>WSP</td>
<td>2 048</td>
<td>2 248 300</td>
<td>U.K.</td>
<td>30</td>
<td>9000</td>
</tr>
<tr>
<td>Ramböll</td>
<td>1 076</td>
<td>1 190 921</td>
<td>Denmark</td>
<td>20</td>
<td>9000</td>
</tr>
<tr>
<td>Grontmij</td>
<td>778</td>
<td>823 471</td>
<td>Netherlands</td>
<td>28</td>
<td>8000</td>
</tr>
<tr>
<td>COWI</td>
<td>596</td>
<td>649 458</td>
<td>Denmark</td>
<td>35</td>
<td>6000</td>
</tr>
<tr>
<td>Golder Associates</td>
<td>123</td>
<td>145 677</td>
<td>Canada</td>
<td>34</td>
<td>7000</td>
</tr>
<tr>
<td>Structor Miljöbyrån</td>
<td>12</td>
<td>18 258</td>
<td>Sweden</td>
<td>1</td>
<td>12</td>
</tr>
<tr>
<td>Watts</td>
<td>4</td>
<td>6 774</td>
<td>U.K.</td>
<td>7</td>
<td>?</td>
</tr>
</tbody>
</table>

* data from 2008 corporate filings

The larger firms such as SWECO, WSP, Ramböll, Grontmij, and COWI offer multi-disciplinary services in design, consulting engineering, management consulting, and architecture. They have many business units and work within infrastructure, industrial, building and structure design as well as environmental planning. Their due diligence services are a minor part of their overall business when viewed in this context. However, they all have dedicated teams within the company who conduct the technical and environmental due diligence.

Both Golder Associates and Structor Miljöbyrån have a focus on the environmental side of consulting. Structor Miljöbyrån is a part of the larger Structor family of companies operating in Sweden and providing similar services to the larger international consultants. However, it is a stand-alone company and will be viewed in that manner for this study. Watts is interestingly the only company which lists Technical Due Diligence as its core competency. This specialized company also offers project management services and is part of a larger consulting group operating chiefly in the U.K. but also throughout Europe. According to the company filings from 2008 and 2009, this company is currently operating at a loss. Perhaps this is due to the downturn in numbers of transactions in the real estate market and thus a reduction in the amount of due diligence being conducted over the past two years.
6. **Procurement of TEDD consultancy services in Sweden**

From the principal’s perspective, technical due diligence is an important part of the overall acquisition process. A variety of checks are necessary when deciding which consulting firm to contract with for the assignment. Market reputation, availability at short notice, telephone and/or personal interviews as well as price levels and scopes of work all influence the principal’s decision of which consultant to use. Most organisations have an employee who has expertise in construction and technical systems as well being responsible for acquisitions for a particular geographical area. The scope of work is critical in trying to ensure that the investor gets feedback on all of the relevant issues. The selection process firstly identifies potential providers, often through international directories or organizations. These are then interviewed and selected based on their tender proposal and the interview.

6.1 **ABK - General Rules of Agreement**

ABK 96 is a twelve-page document designed to facilitate agreements for the procurement of architectural and engineering consultancy services.

These General Rules are the result of negotiations between Föreningen Byggandets Kontraktskomité, BKK (the Construction Contracts Committee) representing Clients, and Arkitekt- och Ingenjörsföretagen (the Swedish Federation of Architects and Consulting Engineers), representing Consultants.

**Introduction**

These general rules of agreement are intended to be used for assignments within the professional field of architects and consulting engineers. Important prerequisites for a fully satisfactory result of the assignment are that the Client and the Consultant:

- have a unanimous conception of the purpose, scope and level of quality of the assignment
- maintain a dialogue, before and during the performance of the assignment
- show each other confidence and openness in general.

**Rule 1: The relationship between the parties**

This section outlines the obligations on the consultant in relation to objectivity in carrying out an assignment, payment from third parties and confidentiality as well as the principal’s obligation to provide information necessary to carry out the work.
Rule 2: Scope of assignment
This section describes how a scope of work should be structured in terms of level of quality and level of reporting detail, budgeting (for hourly-fee based assignments) and also provides a ranking template for the various contract documents. It also includes a reminder in relation to the procurement of all necessary statutory approvals as part of carrying out the particular assignment.

Rule 3: Organisation
This chapter establishes the overall responsibility of the client or principal for coordinating all consultants engaged for a particular assignment, without absolving the consultant or agent from its own obligations to provide the necessary resources in terms of personnel and quality planning as well ensuring that it has sufficient information to carry out its own work.

Rule 4: Performance
This section emphasises the importance of both parties keeping each other information with regard to relevant information and decisions throughout the assignment, not least if changes or additions are made to the scope of work by either party.

Rule 5: Times
This clause sets out the parameters for timeframe in which an assignment is to be carried out. The client is responsible for providing the basic data such as specific start/end dates, any particular events (so called ‘milestones’) while the consultant is responsible for keeping to the agreed time schedule.

There is also information covering changes to such time schedules as well as the mechanism for claiming damages as a result of delays, unless these are specifically described in the contract. The financial liability of the consultant is the case of such event is normally limited to the size of the consultant’s fee or a maximum of 10 times the so-called ‘base amount’ (sw. prisbasbelopp).

Rule 6: Liability
The consultant is liable for damage caused to the client as a result of negligence or omission. This refers to where the client can provide evidence of error or omission, or not having shown the professionalism that is assumed to be common within the industry, on the part of the consultant. This liability normally applies for ten years following completion of the assignment and is limited to 120 times the so-called ‘base amount’ (sw. prisbasbelopp) unless otherwise agreed between the parties.

Rule 7: Right of use and Ownership
This sets outs the client’s right of use of the result of a particular assignment for its own purposes, while maintaining the consultant’s right of ownership of the original documents. The consultant is bound to archive such information for a period of three years following completion.
**Rule 8: Right to Invention**  
This specifies the duties on both parties when an invention is the main result of an assignment. In this case, the client is entitled to become, wholly or partially, the owner of the right to the invention. If the value of this right to the invention is disproportionally large in relation to the consultant’s fee then the consultant is to receive an additional payment.

**Rule 9: Remuneration**  
This describes how the consultant’s fees can be agreed. Two forms – fixed or variable – are given as alternatives. Variable fees are based on the amount of time spent, usually an agreed hourly fee along with an overall budget. Methods for regulating and controlling the potential cost of any changes to an assignment are also described here, including the consultant’s responsibility for keeping the client informed regarding the total running costs incurred on an assignment with a variable fee.

**Rule 10: Terms of Payment**  
An agreed payment plan should be specified in the contract, which the consultant can use to invoice the client. The invoice should specify all work carried out during the period of time which the particular invoice covers. If not specifically agreed invoices can be issued monthly with payment following within one month. The client is responsible for paying any applicable taxes such as VAT. (value added tax)

**Rule 11: Cancellation, termination**  
This outlines the rights of the client to cancel certain parts of an assignment, if they have not yet been carried, and the entitlement to terminate the agreement if the consultant has mismanaged the assignment. The terms for which the consultant is entitled to terminate their particular assignment agreement with the client are also included in this section. The consultant is entitled to payment for the value of the work carried out.

**Rule 12: Insurances**  
This section outlines the requirement for the consultant to maintain adequate insurance cover for documents and other digital information, as well as third party liability cover, which corresponds to the agreed liability to pay damages.

**Rule 13: Disputes**  
Unless specifically agreed in the contract documents any dispute is to be settled in a court of law.
6.2 Investor interviews – methods of selection

Through the interviews carried out it was observed that large international players use the same type of system to purchase due diligence in a local market. Their organizations are structured in such a way that at a very senior level a position exists which has overall technical responsibility for the real estate assets. Part of this responsibility is to check the technical condition of potential acquisitions. This is done through employees with regional responsibility, such as “Europe” or “Northern Europe.” This principal then engages technical experts in each submarket for services such as Technical Due Diligence. Generally, when the principal enters the market for the first time a small handful of pre-screened consultants will be selected for a bidding type process. After reviewing the consultants’ proposals and discussing the expectations, the principal will select the agent. Subsequent purchasing processes tend to be simpler. If the consultant has established a good rapport with the investor, there may be no bidding process. The investor will simply contact the consultant and discuss a price and scope of work for the TEDD. Once this is agreed, the investor will enter into a contract with the consultant for the work.

Regarding the selection of consultants, the investors interviewed seek to ensure that the local providers have professional liability insurance and are governed by a professional body of regulations and best practices. A manager at a Sovereign Wealth Fund, with their European headquarters in London, revealed that they tend to use international service providers instead of local firms. He also referred to a handbook of international service providers that exists in the U.K. This investor has a large amount of investment in Sweden and it can be seen in the market that they have developed a close working relationship with a local player. This local advisor in turn recommends due diligence providers which are subsequently approved by the Sovereign Wealth Fund’s Head of Construction, who sits in the United States. This fund also follows a typical purchasing method for due diligence in that they conduct phone interviews or meetings with three potential providers and use competitive tendering. They then select the best-suited consultant for the assignment. However, the manager also revealed that they tend to re-use the same consultants once they have developed a good working relationship.

6.3 Provider interviews – competing for/maintaining clients

No specific or direct sales activities were prioritised by either of the consultants interviewed. Existing client relationships were clearly more important than pursuing possible new customers. This was the most cost-effective way to bring in new work, within a sector whose business revolves around selling consultants’ time. It was also considered by both parties an efficient way to offer more follow-on services to customers where trust was already established. Examples mentioned during the interviews included how environmental EDD specialists now deliver a complete TEDD service including building fabric surveys and building services analysis. Also, the capability of the project management team who were able to convince their client that the output of the TEDD report formed a sound basis on which to
develop a detailed maintenance plan for the property or for identifying areas to be refurbished or upgraded.

The medium to longer term maintenance of such relationships was considered haphazard at best according to both parties. This was in part due to lack of interest on the part of the client – they had other plans or commitments e.g. already-established contacts or framework agreements for property management services, when it came to the active asset management or further development of a property. Furthermore, the success rate of selling add-on services as a direct result of a TEDD assignment also depended upon efficient and proactive routines within the consultancy companies themselves, something which was not the case in relation to the parties interviewed.

6.4 Analysis

By sticking to large, international consulting firms with professional reputations to protect, the principal avoids adverse selection. The completion of a TEDD report typically does not generate high income to the consultant or even guarantee future work with the same investor. It does, however, ensure that the investor in the future does not rule out the firm when selecting consultants for other types of work. Should the TEDD report point out an item of particular concern, it is likely that the investor will use the same consultant to recommend and oversee a solution to the problem. This provides an incentive for the TEDD provider to be thorough and identify potential costs for the investor. In the Stockholm market the international consulting firms are assumed to be competent and hard-working by the investors. There is evidence of the existence of information asymmetry between the international investor and the consultant. Liability is limited for the consultant, while the international investors were hypothesized to think that the same liability that applies in the investor’s home market applies in Sweden. In reality, most international investors did not base the selection of the consultant on applicable liability limits. All of the international service providers are assumed to provide equal assurances that their work is done to the best of their ability.

6.5 Conclusion

The reputation of the consultant and familiarity with the scope of work requested is of primary importance when selecting technical consultants. By sticking with international consulting firms, the investor avoids selecting a bad consultant. From the agent’s point of view, maintaining existing client relationships is the main priority.
7. **How TEDD consultancy contracts are constructed**

Contracts between investors and consultants are relatively simple in format, facilitated by the uncomplicated approach contained within the Swedish ABK document governing the appointment of architectural and engineering consultants. Normally a short description of how the work is to be carried out – the three phases described earlier in chapter 6 - follows confirmation of how the consultant was invited to tender. Due to the necessity for secrecy and discretion at all stages of a property transaction invitations to tender tend to be made on a verbal basis, unless the client is a public body – in which case they are governed by the law on public procurement. Relevant documentation, describing in detail the work required or which forms part of the historical records to be analysed, is normally listed in the contract in order to avoid any misunderstanding between the parties in relation to what forms the basis for the technical due diligence report. Once these project specifics have been detailed, standard clauses related to professional indemnity, insurance, invoicing and payment terms as well as intellectual rights over new information produced during the assignment are included.

In most cases reported during the interviews it was the consultants’ own pro-forma contract template – tailored according to the general requirements of ABK09 – which was used. In one case – a mainland European investment bank – the client’s own templates were used for both agreeing terms for the work as well as reporting procedures and checks.

Negotiations during the tender and contract signing period are normally handled by telephone or email due to the relatively intensive nature of due diligence work.

### 7.1 Scope of Work

The following Scope of Work was defined for technical due diligence in a 2008 transaction. The principal in this case was an international fund and the agent was one of the larger consulting firms previously discussed. The TEDD inventory included an assessment of the building technical systems, structural engineering issues, environmental issues and indoor environmental issues and included the following tasks:

- Review of documents related to the technical systems, structural engineering, history of the property and any protocols from performed inspections;
- Visual inspection of the property;
- Interviews with available property management and maintenance staff during the inspections;
• Telephone interviews with the Local Authority at the municipality and the County Administrative Board in Stockholm (Länsstyrelsen I Stockholm) with respect to site history, impact on soil and groundwater, complaints and nuisances;

• Overall risk assessment of the occurrence of contaminated land; and

• Preparation of cost estimates for key technical and environmental issues identified in connection with inspections and desk top studies.

The above scope is vague in several areas. The extent and time spent on the visual inspection is not defined. Furthermore, the interviews with the staff are limited to those who are available during the inspection. The other tasks are more clearly defined, as reviewing available documentation, reviewing municipal records and checking for contamination seem to be straightforward. However, the agent in this case has ample room to interpret the extent of the visual inspection and no responsibility to ensure that maintenance staff is interviewed.

7.2 Disclaimers and Liability

The resulting report came with, among several others, the following disclaimers:

• (AGENT) has assumed that all provided information, in writing as well as through verbal communication, is correct and that no verification of such is required. During the inspections and document review of the subject property random checks, verifications and visual inspections have been performed in areas representative for each issue respectively.

• This report shall not be considered as a warranty that the inspected properties are free from technical and environmental risks other than those hereafter presented.

• The amount of time available for this analysis has been limited. Therefore, it must be noted that under these conditions both depth and extent of the analysis is limited.

• The methods and recommendations provided by (AGENT) are not to be regarded as exhaustive. Additional and alternative methods, recommendations and thereby cost estimates/calculations cannot be excluded in addition to those provided by (AGENT) in the assessment.

While these statements attempt to relieve the agent of any potential future liability, it is to be noted that the report itself was investigative and professional. This lends credit to the thought that due diligence firms attempt to do the best review they can in the limited time that the fee allows to ensure they keep a good reputation in the market. The principal in this case was satisfied with the extent of the report at the time of delivery. It identified several potential problems that needed to be addressed and gave a general review of building systems. Of interest is that the heating system in this building is new and functions well. However, the cost of heating for the property is extremely high due to the combination of the building
design, insulation, and the heating system. This aspect of the building was not examined by the technical due diligence report. The principal did not specifically ask the agent to comment on the efficiency of the heating system in this case, and the agent fulfilled its duty in examining and reporting on the condition of the system itself.

Two important factors here are the level of detail describing the work to be carried out following discussions between client and consultant, as well as the time available for the agreed scope of works. These are primary constraints and very often are at the root of questions raised after the technical due diligence report has been completed, when it becomes apparent that principal and agent expectations do not match.

The quality of the scope is dependent on the input of both principal and agent – the client needs to know what he or she wants and to be able to describe that as accurately a possible; similarly the consultant needs to be sufficiently competent to understand and interpret the principal’s requirements. The vaguer the input received from a customer the vaguer the scope of works, as well as the final report. The consultant who fails to interpret the client’s wishes accurately and who is too inexperienced in technical due diligence to know what to ask before writing a scope of works can also contribute to an unclear contract and possibly a report that doesn’t match the client’s needs.

Time is a constraint which affects every stage of the due diligence process. It is most tangible in relation to the physical inspection on site where, invariably, a subjective assessment is made by the respective technical experts as to how much time should be spent and on what particular technical area. This is not surprising since the opinion of a client could be that the use of such consultants is partly in order to allow such a qualified person to make such decisions and take the associated risks. On the consultant side where knowledge and experience of such decision-making, and their implications, is considered part of the assignment there are established disclaimers which are designed to limit the agent’s risk exposure. While this can be viewed as a frustrating factor for the principal - reading some contracts can raise questions about to what extent technical due diligence information can be relied upon – it can be viewed in relation to the risk and reward equation for technical due diligence services compared with other services provided within the area of due diligence. If, however, an issue arises with regard to something which the client feels has been overlooked and should have been included, differences of opinion about the proportionality of such risk and reward, as well as liability, are not uncommon.
7.3 Analysis

The actual format of the contract and price mechanism was not high on the investors’ list of concerns. Aligning the consultant’s interest with the thoroughness of the investigation did not seem to resonate with the interviewees. They recognized that the service provider will most likely provide a high level of service to live up to their professional relationship and to deliver the items promised in the contract. One investor explicitly recognized that the consultant does not have any potential upside from the investment and therefore should not be expected to carry a risk should some technical fault be missed during the investigation. Thus the scope of work appears to be the variable in the contract that would need the most attention during discussions between the principal and the agent. The overriding nature of the ABK document, in combination with the assignment contract itself, provides a relatively high level of financial protection in limiting the consultant’s own liability. This is provided of course that the TEDD report does not, as with all consultancy assignments, contain any serious omissions or mistakes.

7.4 Conclusion

There is a strong emphasis placed on the development and communication of a thorough scope of work, but appears to be less interest in assigning any significant level of financial liability to the consultant. There seems to be a mutual appreciation by both parties of the limitations of assigning liability when writing contracts according to the conditions within ABK, as well as the relationship between the level of risk-taking by the consultant in relation to the relatively low overall cost for technical due diligence services.
8. **How consultants are compensated**

Remuneration methods are traditionally based on hourly rates; this method of payment is common for almost all engineering consultancy services provided in Sweden and is implicit in the general rules of the agreement document for engineering consultancy services in Sweden, ABK (*Allmänna bestämmelser för konsultuppdrag inom arkitekt- och ingenjörsverksamhet*). The level of awareness that foreign investors have of ABK is important in the discussion surrounding the principal-agent problem in contracting due diligence. If the local agent has more information regarding rights and obligations under Swedish law, the potential for moral hazard problems arise. Foreign investors frequently have their own standards for contracts and attempt to impose these upon Swedish consultants. There is also evidence of different types of fee structures in the market during the past decade.

**8.1 Hourly based fee structure**

Although the total cost is important to the selection of the consultant, the investor also must ensure that enough time is allocated that a thorough job can be performed. To reach a compromise, a common method of remuneration is an hourly based fee with a targeted budget or ceiling price in order to keep a check on running costs. In this case, in relation to costs, the onus is on the consultant to ensure that the client is kept informed as to how much of the agreed ‘budget’ has been used at any point in time during the assignment. Failure to do this has led, in several cases according to those interviewed, to disagreement between agent and principal about what was included and what had been delivered. While the hourly fees for such advisory services can be quite high, the total cost is a low ticket item compared to the value of the transaction. The reputation of the consultant and their connection to international service providers are the most important factors by which the consultant is chosen. The overall cost or specific type of contract is seen to be a secondary concern in the investor’s decision making.

**8.2 Alternative remuneration methods**

In some cases, e.g. a large portfolio containing fifty properties or more, economies of scale can come into play where it is in both parties’ interests to try to agree a fixed price per property or, where the type of property is the same e.g. a large residential portfolio, a fixed price per square metre can provide the right type of incentive. While this remuneration method is not widely used, it has been a structure used in the Stockholm market. In one case, work was even carried out on a no deal-no fee basis, something which is relatively unusual for technical due diligence.

The most common alternative method for payment is the fixed-price method. In this model, the consultant will budget the number of hours assumed needed to complete the assignment.
A buffer may be added to this total amount and the price fixed. In this method the consultant takes the risk that the investigations and report will take longer than expected. However, should the investigations and report writing be completed more quickly than anticipated, the consultant still receives the same compensation. One of the interviewees did carry out a significant number of fixed-price work during the property transaction boom years of 2006 and 2007, where time seems to have been the main constraint on the level of turnover in the market.

8.3 Analysis

Not surprisingly, price was seen to play the biggest role when negotiating with prospective clients, especially if a fixed price tender was requested – something which foreign investors are more used to compared with Swedish consultants it seems. Where long-standing clients were concerned time was the main factor, due to the fact that pricing framework agreements were usually in place. Also, during the latest boom period for property transactions in Sweden, where demand from foreign investors was high, there were a larger number of customers who were less concerned with price and more concerned with getting a report delivered as soon as possible. While these conditions can lead to potential principal-agent problems, it was seen in the market that the consultants did the best job they could in the time allocated by the investor, and the investor was aware of the increased risk that came with a less thorough investigations. Since the market was in an upswing the investors tended to accept more risks due to their perception and expectation of higher profits. Generally, the consultants will deliver the report and have a question and answer period. If the report is deemed to be accepted, the consultant will send an invoice with the total hours or fixed price for the report. This will be paid in the time specified in the invoice.

8.4 Conclusion

Existing arrangements between principals and agents seem to be based on a low-risk service being provided at a relatively low cost. Hourly based fee structures with a targeted budget are the most common method for remuneration. However, international investors tend to prefer fixed-price contracts.
9. How quality is guaranteed (and moral hazard avoided)

Once the price and scope of work for the due diligence services have been established and agreed, the agent sets out to fulfil the contract. Since the budget is normally based on an hourly rate, the incentive for the agent can vary depending on the type of contract.

9.1 Potential Moral Hazard

In a fixed rate contract, one could presume that a rational agent would attempt to satisfy the conditions of the contract in the least amount of time possible, thus freeing up staff to move on to the next assignment and to create more turnover for the company. On an hourly-rate-based contract, one could presume that the agent is incentivized to allocate more time per staff member on the assignment in order to maximise the fee for the assignment. It is of interest to observe how consulting firms act, once the assignment has been awarded to them, in relation to budgeting staff time to deliver the assignment. It is possible that the agent’s professional pride in conducting a proper investigation far outweighs the motivation to produce profit for the firm. The extent of liability an agent accepts when writing a due diligence report is also important in considering the potential for moral hazard.

9.2 Performance of the contract

On an operational level, in terms of the average time span for any particular assignment, the execution and delivery of an environmental due diligence stands out from an engineering consultancy perspective. Tendering, negotiation and delivery of reports and findings all happen within a matter of weeks unless the particular assignment involves a large portfolio of properties spread over a large geographical area. This is by nature a requirement of the transaction process where lead times are kept short in order maintain commercial advantage as well as uphold generally accepted rules of confidentiality.

The importance attached to the service varied according to the interviewees, depending on the client. Three primary client groups were identified:

1. Those interested in ‘bottom line’ costs identified by the TEDD report in order to use in negotiations with seller; less interested in how overall report is presented as long as costs are clearly motivated.

2. A more conservative group of customers where every possible risk is interesting, including its financial implication, but where a more scientific explanation is sought after in order to get to the bottom of each potential risk. An assignment where various
questions are often investigated further or discussed openly between buyer and seller during the DD process.

3. A mixture of the above two groups where ‘bottom-line’ costs are the priority but where also long-term ownership is in the mind of the purchaser. Here, discussions in relation to maintenance planning, payback times for possible reinvestments or upgrades (particularly in relation to energy saving projects) are quite common.

Depending on the type of client, the due diligence provider can be seen to adapt their strategy in the performance of the contract. The work will be carried out according to the agreed scope and price, and the consultant aims to satisfy the type of client identified.

9.3 Analysis

From both the consultant’s and the investor’s perspective, the consultant’s concern about their reputation was seen to be the factor governing proper performance of the contract. Additionally, investors were likely to use the same providers after establishing successful working relationships with them, thereby reinforcing the proper performance of the contract. Existing client relationships were clearly more important to the consultants than pursuing possible new customers. This was the most cost-effective way to bring in new work, within a sector whose business revolves around selling consultants’ time. It was also considered by both parties an efficient way to offer more follow-on services to customers where trust was already established.

9.4 Conclusion

The reputation of the consultant is considered to be the most important factor in ensuring that the work carried out is thorough and accurate. Although the different types of contracts may lead to potential principal agent problems, this is mostly avoided due to the nature of the consulting business. In a competitive market, the consultants must protect their reputation.
10. Conclusions

In reviewing the current status of the Stockholm Real Estate Market, Principal-Agent Theory, and discussing the contracts used for technical and environmental due diligence with market participants, several interesting discussion points have surfaced. Firstly, it appears that international investors do not attempt to align the interests of the consultant with any type of incentive structure. The service is provided for a fee based on the hours the consultant spends on the investigations. A budget in terms of so-called “ceiling price” (sw. tak pris) can be seen in the market. This is significant in that, although the principal feels that the agent will keep the budget reasonable in order to protect their reputation, another check is put in place to ensure that the agent does not take advantage of the situation. This is also part of good professional practice according to the ABK conditions of contract, which has been negotiated between representatives of both principals and agents. In the contracting of TEDD, there is a strong emphasis placed on the development and communication of a thorough scope of work, but appears to be less interest in assigning any significant level of financial liability to the consultant. The reputation of the consultant is considered to be the most important factor in ensuring that the work carried out is thorough and accurate. One investor explicitly recognized that the consultant does not have any potential upside from the investment and therefore should not be expected to carry a risk should some technical fault be missed during the investigation.

A second interesting revelation is that most of the investors were not overly concerned about the written form of the contract, nor were they particularly aware of the ABK regulations. However, the local consultants are well aware of the limitations to liability contained in those governing documents. There is clearly asymmetric information in regard to the legal rights and obligations contained in the contracts. However, the investors also assumed that the consultants were professionals and would do their best in order to ensure their reputation remained intact for the long term.

Existing arrangements between principals and agents seem to be based on a low-risk service being provided at a relatively low price. A possible area for further research would be to investigate the interest in and possibilities for both parties of raising the stakes i.e. by placing more financial liability on the TEDD provider for problems discovered during the hold period that reasonably could have been discovered during the due diligence phase, as well as at the same time compensating such an agent at a higher level. A significant factor, however, which is borne out by the findings of this thesis is the apparent lack of incentive among investors and service providers, due to the rigid limitations within the standard ABK conditions of contract for employing consultants in Sweden. The findings of this thesis also confirm that there is a lack of interest on the part of investors in incurring additional costs, through sharing profits arising from a property transaction, for a service which has become standardised within the Swedish market.
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**Interviews**

Asset Manager for Sovereign Wealth Fund based in London. Telephone Interview. 11 August 2010.


Vice President of Acquisitions for European Property Fund with headquarters in London. Telephone Interview. 12 August 2010.

Project Manager at large Sweden-based multinational engineering consultancy firm. 19 Nov 2010.

Account Manager with specialisation in environmental consultancy at medium-sized Swedish engineering firm. 19 Nov 2010.

Managing Director based in Stockholm with medium-sized multinational engineering consultancy firm, with specialisation in due diligence services. 19 Nov 2010.

Project Manager based in Stockholm with large Nordics-based multinational engineering consultancy firm. 19 Nov 2010.
Appendix 1 - Investor interview questionnaire

1. How did you find out which company to hire for DD?

2. How much importance does your company place on the tech. DD reports? What do you use these for (CAPEX budgeting, risk analysis)?

3. Once you had a contact name, how did you proceed to contract with this company?

4. What do you think about the level of service the advisor provides in Stockholm?

5. Was the report in line with your expectations/was the scope of work correct?

6. Do you prefer to use fixed price or hourly rates with an estimated budget?

7. Where you satisfied with the contracts themselves? Did you propose your own contract or use their contract?

8. Who are the DD providers that come to mind for Stockholm?
Appendix 2 - TEDD providers interview questionnaire

1. How does the procurement of TEDD operate within your organisation?

2. How much importance does your company place on direct selling to potential clients?

3. How are clients won and maintained?

4. What do you think about the level of importance clients attach to the TEDD?

5. What areas of the contract are mostly discussed/negotiated with the client? Is there much discussion about the details of how the work is carried out, type of reporting, professional liability or is price the main factor?

6. How are TEDD services normally sold – by the hour, lump sum, different models each time? Do you prefer a particular method? Why?

7. Were you satisfied with the TEDD contracts? Did you propose your own contract or use the client’s own template?
Appendix 3 - Sample TEDD report
Property - Shopping Centre

Technical and Environmental Due Diligence

Date: YYYY-MM-DD
Project number: Xxxxxxxxxxxxx
Status: Final
Project Manager: Name Xxxxxxxxxxxxx
Inspectors: Name xxxx, Name xxxx, Name xxxx
Contents

1. Executive Summary 2

2. Introduction 3
   2.1 Aim of the study 3
   2.2 Scope 3
   2.3 Attendants at the inspection 3
   2.4 Conditions and assumptions for the study 3

3. General description 4

4. Inspections results 4
   4.1 Estimated costs for recommended measures 4

5. Plans and regulations 5
   5.1 Easements 5

Appendices

Appendix 1 Inspection Reports
Appendix 2 Phase 1 Desktop Environmental Assessment
1. **Executive Summary**

**General**
The property, containing Xxxxx shopping centre, was originally constructed in 19XX and functioned as a xxxxx department store until 19XX when it was converted to a multi-outlet shopping centre. Renovation and refurbishment works have been carried out since 2000 in conjunction with the departure of the Konsum supermarket and the arrival of xxxxxx and as new tenants. The office parts of the property have generally been refurbished in conjunction with adjustments for new tenants. The property appears to be well maintained, benefiting from the fact that the present owner previously worked on site as property manager and has, therefore, contributed actively to the state of repair in which the property is today.

**Buildings**
No serious faults could be identified during the site inspection. However, keeping in mind the overall ages of the building and its services, costs have been taken up in the individual inspection reports for items that may be required over the coming ten-year period. Some further investigation is recommended in relation to some minor cracking observed. It is also considered worthwhile to produce an inventory of the building in relation to asbestos and other possible deleterious materials.

**Mechanical Services**
Mechanical installations are well maintained but date back to 19XX - the ventilation and control systems will reach their expected lifetime within the next ten years and should, therefore, be replaced. This cost alone accounts for over 50% of the total cost for recommended measures. This sum was arrived at using an estimated rate of 1000SEK/m² based on information provided in xxxxxx Prisbok 2006. Replacement of these primary air-handling and control systems, which are forty years old, will bring longer-term benefits to the property including lower heating consumption. If they are not replaced in time, the main difficulty in terms of ongoing maintenance will be in procuring spare parts.

**Electrical Services**
Electrical installations are in a normal condition in relation to the year of construction. Some installations date back to the year of construction and should eventually be replaced. While the sales report states that the electrical systems have been thoroughly upgraded and modernised, it is our opinion that an additional amount of such work is still required.

**Environmental**
The historical and present use of the property indicates that the risk of contaminants in the soil and groundwater is low. In relation to the building fabric, some pipe-work insulation probably contains asbestos as do some steel doors. It was not possible to confirm this during the site inspection but is more than likely based on previous experience with buildings of this age. Some minor damage to this insulation, seen during inspection, must be sealed to prevent fibres being released into the air. An asbestos survey is recommended and cost estimation has been included for replacing affected pipe work in the building inspection report.
2. **Introduction**

This report has been produced by Ramböll for Xxxx Properties. The aim of the report is to evaluate the overall technical and environmental status of the buildings that make up Xxx Shopping Centre, located in Yyyyy in Sweden, as well as to estimate the cost of carrying out certain recommended improvement works.

2.1 **Aim of the study**

The report aims to give an overall description of the buildings, identify essential technical and environmental defects that can affect the financial value of the property and offer concise recommendations, including estimated costs, for rectifying these.

The inspection of the buildings was carried out on yy Xx 2008 and consisted of a visual inspection on site, document review and a thorough interview with the current owner’s Property Manager.

2.2 **Scope**

The scope of the work includes describing the technical and environmental status of the property 'Property' known as Shopping Centre located in Yyy.

The report covers following technical areas:

- Buildings and External areas
- Mechanical Installations & Services
- Electrical Installations & Services
- Desktop Environmental Assessment

Some technical and environmental documentation has been made available for this inspection. Any permissions or requirements from the authorities based on the current ongoing activities at the properties are not evaluated within this report.

2.3 **Attendants at the inspection**

Ramboll’s inspection team consisted of;

Building     Jerry Fitzgerald
Mechanical Installations    Lars xxxxx
Electrical Installations    Lar-Olof xxxxx

The Desktop Environmental Assessment was performed by Robert xxxxx from Ramboll's Water & Environmental department.

The property owner was represented by Sven Svensson during the inspection.

2.4 **Conditions and assumptions for the study**

Randomly chosen parts of the buildings were inspected on the assumption that these were representative of the property as a whole.

The inspection of the properties was not performed at a level of detail as for an in-depth inventory, but rather to an extent which allows reliable assumptions to be made about the physical condition of the properties.
The work has been conducted in accordance with generally accepted professional practice within the restrictions imposed by the time and resources available, and is based on the best professional judgement of Ramböll.

As a technical consultant, Ramböll is unable to provide legal advice, and it is therefore recommended to verify any conclusions regarding legal issues with professional legal advisors before proceeding.

Cost estimates presented in this report should be regarded as indicative. They are also subject to change as more information becomes available.

Due to the limited timeframe for the project, it has not been possible to carry out any in-depth studies.

3. **General description**

The property was originally constructed in 19XX and functioned as a xxxxx department store until 19XX when it was converted to a multi-outlet shopping centre. The retail area in the galleria is approximately 7,000 m². Renovation and refurbishment works have been carried out since 20XX in conjunction with the departure of the xxxxx supermarket and the arrival of xxxxx and xxxxx as new tenants. The office parts of the property have generally been refurbished in conjunction with adjustments for new tenants.

The property is located in prime retail area in central Yyyy. The building holds the mall Galleria Xxxx and has many of the larger chain stores as tenants, i.e. xxxxx, xxxxx, xxxxx and xxxxx. Galleria Xxxx is one out of two larger malls in central Xxxxxxx and has annually approximately 2,000,000 visitors. Apart from the mall the building contains office premises and a two-storey car park with 95 No. parking spaces.

4. **Inspections results**

An individual inspection report has been compiled for the following areas: Building, Mechanical Installations and Electrical Installations together with an overall summary report. A so-called desktop Phase 1 Environmental report is also included.

Building parts and M&E systems are described in these inspection reports. The condition of each is judged to be Poor, Normal or Good. In making this judgement account is taken of the generally expected standard of a building of a similar age that was also renovated around the same time.

4.1 **Estimated costs for recommended measures**

The costs stated in the inspection reports are costs for maintenance occurring relatively seldom and extraordinary costs due to neglected maintenance.
The suggested measures are divided in three periods - immediate measures (within 2 years), measures in the short to medium term (2-5 years) and measures in the longer run (5-10 years).

Costs are given in Swedish krona (SEK) at 2006 price levels, VAT is excluded. All costs are estimated based on experience from other similar properties and activities, and are not intended to be exact. These costs can also change as a result of further studies and analysis.

5. Plans and regulations

5.1 Easements

According to documents retrieved from the Lantmäteriet (Swedish Ordnance Survey's) Property Search database, there is an agreement in place for the provision of a small number parking spaces and storage room for xxxxx bank, who reside in a neighbouring property.

There is also a similar agreement in place for the electricity transformer station which belongs to xxxxx (see Electrical Services report)

Stockholm YYYY-MM-DD
Ramböll Sverige AB
/Name XXXXXXXXXX
Appendix 1

Summary, Technical Inspections

Property: Property –
Inspection date: YYYY-MM-DD
Author: Name XXXXXXX, Ramböll Sverige AB

1 Property Facts

<table>
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<tr>
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<th>Office GLA [sq.m]:</th>
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</tr>
<tr>
<td>Retail GLA [sq.m]:</td>
<td>Site Area [ha]:</td>
<td>Parking spaces:</td>
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2 Summary

<table>
<thead>
<tr>
<th>Building</th>
<th>Status</th>
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<tr>
<td>The property was originally constructed in 19XX and functioned as a XXXXXX department store until 20XX when it was converted to a multi-outlet shopping centre. Renovation and refurbishment works have been carried out since 20XX in conjunction with the departure of the XXXXX supermarket and the arrival of XXXXX and XXXXX as new tenants. The office parts of the property have generally been refurbished in conjunction with adjustments for new tenants. No serious faults were identified at the inspections. However, keeping in mind the overall age of the building, costs have been taken up for items that can be required when considering a ten-year capital expenditure period. Some further investigation is also recommended in relation to some minor cracking observed as well as obtaining an inventory of the building in relation to asbestos and other possible deleterious materials. The buildings appear to be well maintained benefiting from the fact that the present owner previously worked on site as property manager and has, therefore, contributed actively to the state of repair in which the property is today.</td>
<td>Good</td>
</tr>
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<table>
<thead>
<tr>
<th>Mechanical Installations</th>
<th>Status</th>
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<tr>
<td>Mechanical installations are well maintained but date back to 19XX - the ventilation and control systems will reach there expected lifetime within the next ten years and should, therefore, be replaced.</td>
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<tbody>
<tr>
<td>Electrical services are in a normal condition in relation to the year of construction. Some installations date back to the year of construction and should eventually be replaced.</td>
<td>Good</td>
</tr>
</tbody>
</table>
Environmental Issues

During the demolishing of old buildings and construction of the supermarket in 20XX, the property underwent extensive groundwork and large quantities of potentially contaminated soil have been removed. The chances that potentially contaminated soil has been left in the ground are probably very small. The historical and present use of the property indicates that the risk of contaminants in the soil and groundwater is low.

In relation to the building fabric, some pipe-work insulation probably contains asbestos as do some steel doors. It was not possible to confirm this during the site inspection but is more than likely based on previous experience with buildings of this age. Some minor damage to this insulation, seen during inspection, must be sealed to prevent fibres being released into the air. An asbestos survey is recommended and a cost estimation has been included for replacing affected pipe work in the building inspection report.

<table>
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<tr>
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<tr>
<td>Environmental Issues</td>
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<tr>
<td><strong>Total:</strong></td>
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</table>
4 Photos from Inspection

Shopping centre façade on high street

Inside shopping mall

Leak through car park slab infill

Roof area

Damaged pipe insulation

Crack in basement area wall high level

Sprinkler plant room

Electrical distribution panel
## Inspection Report, Building

**Property:** Property  
**Inspection date:** YYYY-MM-DD  
**Inspector:** Name XXXXXX, Ramböll Sverige AB

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<th>System</th>
<th>Description</th>
<th>Status</th>
<th>Recommended measures</th>
<th>Period</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Geology conditions</td>
<td>Predominantly bedrock. Conditions at site not investigated in detail.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>External Areas</td>
<td>Concrete-paved footpaths on high street outside centre.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drainage</td>
<td>Connected to public sewerage system. Recent leak from XXXXXXX into basement has been fixed. Down-pipes in lower car-park area rusting due to leaking gullies at upper level which discharge into this pipe-work. Owner states problem is in sealing effectively between gullies (some of which have been replaced) and floor slab.</td>
<td>X</td>
<td>Replace gullies. Repair, repaint down-pipes.</td>
<td>X</td>
<td>XX kSEK</td>
</tr>
<tr>
<td>Foundation</td>
<td>In-situ concrete. Minor cracking visible where concrete was untreated in basement storage/plant area. Car-park asphalt wearing course showed no significant signs of cracking or settlement nor did visible floor structure overhead.</td>
<td>X</td>
<td>Investigate cracking further to confirm if action is required.</td>
<td>X</td>
<td>X kSEK</td>
</tr>
<tr>
<td>Frame</td>
<td>In-situ concrete. No signs of significant damage could be detected during inspection.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Façades</td>
<td>Brickwork primarily. Also, granite façade panels as well as various glazed areas.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Roof

Metal standing seam and felt roof coverings on various areas and at different levels. According to owner, metal roof areas have been painted at least once during last 15 years and felt area was replaced in then late 19XXs.

All areas were not inspected due to bad weather conditions – no problems with materials or leaks were reported by the owner or seen during inspection.

<p>| | | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Replacement of felt is probable over coming ten years. Replacement of metal is also possible if material dates from 19XX (this could not be confirmed)</td>
<td>X</td>
</tr>
</tbody>
</table>

### Dewatering

Internal drainage system.

According to owner, 1 No. area of roof gutter fills during heavy rainfall although no leaks have been experienced.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>X</td>
<td>Investigate to confirm if drainage design is adequate in this area.</td>
</tr>
</tbody>
</table>

### Windows

Double glazed, insulating glass and glass blocks.

Glazed aluminium partitions to shop fronts along street and internally in retail centre.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

### Glass partitions

Automatic sliding doors, glazed with stainless steel frames.

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Gates

2 No. roller shutter doors at Good-In.

Steel doors to back-of-house areas.

<p>| | | |</p>
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>X</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Internal finishes and Standard in Shops and Offices

Shops:

- Finishes include bespoke suspended ceilings, hardwood and natural stone floors, painted and stone-clad walls. Normal state of repair and adapted to suit retail activity.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>

### Internal finishes and Standard in Shops and Offices

Offices:

- Finishes in the office areas include more standard type of suspended ceilings, PVC floor coverings and painted walls. Normal state of repair and fully adjusted to office use.

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
</tbody>
</table>
### Appendix 1

<table>
<thead>
<tr>
<th>Internal finishes and Standard in Shops and Offices</th>
<th>Back-of-house:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Varying types and standards of finish including bare/painted and PVC-covered concrete floors, painted walls with finished brickwork in basement/car-park areas; painted concrete floor structure overhead in plant rooms and corridors – terrazzo to access stairwell; PVC and tiled flooring, painted walls in former Konsum supermarket area – now used by all tenants as activity/meeting facility.</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Internal finishes and Standard in Shops and Offices</th>
<th>Car park:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Asphalt wearing course on concrete floor slab, painted concrete structure with exposed brickwork to outer/boundary walls.</td>
<td>X</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other issues</th>
<th>Insulation to water pipe-work probably contains asbestos – some minor damage seen during inspection.</th>
<th>Seal damaged areas</th>
<th>Carry out asbestos inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>X</td>
<td>XX kSEK</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other issues</th>
<th>Car-park: former hole in upper level slab which was filled in line with new access ramp is not properly sealed – as a result water runs through joint in floor slab through to lower level car park.</th>
<th>Investigate how to construct watertight joint.</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td></td>
<td>X</td>
<td>XX kSEK</td>
</tr>
</tbody>
</table>

### Cost Summary Measures

| Measures within 0-2 years | ~ XX kSEK |
| Measures within 2-5 years | ~ XX kSEK |
| Measures within 5-10 years | ~ XX kSEK |

### Summary Building

<table>
<thead>
<tr>
<th>Status Summary</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
</tr>
<tr>
<td>Normal</td>
</tr>
<tr>
<td>Good</td>
</tr>
</tbody>
</table>

The property was originally constructed in 20XX and functioned as a XXXXX department store until 20XX when it was converted to a multi-outlet shopping centre. Renovation and refurbishment works have been carried out since 20XX in conjunction with the departure of the XXXXX supermarket and the arrival of XXXXX and XXXXX as new tenants. The office parts of the property have generally been refurbished in conjunction with adjustments for new tenants. No serious faults were identified at the inspections. However, keeping in mind the overall age of the building, costs have been taken up for items that can be required when considering a ten-year capital expenditure period. Some further investigation is also recommended in relation to some minor cracking observed as well as obtaining an inventory of the building in relation to asbestos and other possible deleterious materials. The buildings appear to be well maintained benefiting from the fact that the present owner previously worked on site as property manager and has, therefore, contributed actively to the state of repair in which the property is today.
## Appendix 1

### Inspection Report, Mechanical Services

**Property:**  
Property

**Inspection date:**  
YYYY-MM-DD

**Inspector:**  
Name XXXXX, Ramböll Sverige AB

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
<th>Status</th>
<th>Recommended measures</th>
<th>Period</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating</td>
<td>The building is connected to the district heating system. The distributor is E-on. Heating system dates back to 19XX, Heat exchangers, pumps and valves and other equipment were replaced between 19XX and 20XX. Heating to the building is mainly by double-pipe system to radiators with thermostats and by comfort heating through the ventilation system. Some rust visible on pipe joints by the ventilation radiators.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cooling</td>
<td>One cooling machine from 19XX is located on roof to serve cooling batteries in the air handling systems for all tenants. Cooling refrigerant is 2x54 kg R407C.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tap and Wastewater</td>
<td>Water pipes are made of copper and wastewater pipes are mostly cast iron. Waste water pipes from XXXXX are made of stainless steel. Tap water from local public supply. Heated tap water from separate heat exchanger connected to the district heating system. Wastewater pipes are connected to municipal network. Rainwater pipes are connected to municipal network. There are 2 no. pump sumps and 2 no. grease separators in basement.</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation</td>
<td>Two separate on-site-constructed air handling systems from 19XX provide heating and cooling to all tenants. One unused compressor is still inside the intake duct.</td>
<td>X</td>
<td>Remove compressor.</td>
<td>X</td>
<td>XX kSEK</td>
</tr>
<tr>
<td></td>
<td>Ventilation systems have been upgraded and well maintained over the last 40 years but should eventually be replaced with more modern air handling units with in-built heat exchange within the next ten years.</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Appendix 1</td>
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<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sprinkler</th>
<th>Provided in 4 No. sections. Water connected to municipal supply. Earlier experience with low water pressure are now resolved according to owner.</th>
<th>X</th>
</tr>
</thead>
<tbody>
<tr>
<td>C&amp;M system</td>
<td>Local control system from 19XX. 'Landis &amp; Gyr’ Replaced along with the ventilation.</td>
<td>X</td>
</tr>
<tr>
<td>Grease and Oil separators</td>
<td>2 No. grease separators in basement. Fixing of remarks</td>
<td>X</td>
</tr>
<tr>
<td>OVK-inspection</td>
<td>Approved minutes of last inspection (carried out 25 Jan. 20XX) with minor remarks about updating drawings and cleaning. Valid until 25 Jan. 20XX and until 25 Jan. 20XX for the car-park.</td>
<td>X</td>
</tr>
<tr>
<td>Documentation</td>
<td>All necessary documents and paper drawings available in site office.</td>
<td>X</td>
</tr>
<tr>
<td>Energy use</td>
<td>According to available records electricity consumption is very high:- 20XX: 265kWh/m² (Normal 150kWh/m²) High heating consumption 20XX: 150 kWh/m² (Normal 110 kWh/m²) Normal water consumption 20XX: 0,48 m³/m²</td>
<td>X</td>
</tr>
<tr>
<td>Other issues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Cost Summary Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measures within 0-2 years</td>
</tr>
<tr>
<td>Measures within 2-5 years</td>
</tr>
<tr>
<td>Measures within 5-10 years</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Summary Mechanical Installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical installations are well maintained but date back to 19XX - the ventilation and control systems will reach there expected lifetime within the next ten years and should, therefore, be replaced.</td>
</tr>
<tr>
<td>Normal</td>
</tr>
<tr>
<td>Good</td>
</tr>
</tbody>
</table>
### Inspection Report, Electrical Services

**Property:** Property  
**Inspection date:** YYYY-MM-DD  
**Inspector:** Name XXXXX, Ramböll Sverige AB

<table>
<thead>
<tr>
<th>System</th>
<th>Description</th>
<th>Status</th>
<th>Recommended measures</th>
<th>Period</th>
<th>Est. Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Power supply</strong></td>
<td>High voltage incoming supply. Distributed by xxx. Net owner xxx. High voltage switchgear was according to the owner in normal condition – access not possible.</td>
<td>X</td>
<td></td>
<td>0-2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Transformers</strong></td>
<td>Low voltage transformers in the building. According to the owner they are in normal condition - access not possible.</td>
<td>X</td>
<td></td>
<td>0-2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Distribution board and Raising Main Distribution</strong></td>
<td>Earthing system is TN-C (4-conductor system). 550kW Main distribution board is located in separate electrical room and equipped with fuses. Electrical boards and meters are equipped with fuses. EN inspection was carried out YYYY-MM-DD, some items left. Busbar trunking in the retail area.</td>
<td>X</td>
<td>The main distribution board has been well maintained over 40 years but recommend replacing it within the next ten years.</td>
<td>XX</td>
<td>XX kSEK</td>
</tr>
<tr>
<td><strong>Stand by power</strong></td>
<td>UPS installed for emergency lighting and specific appliances such as fire alarm, intruder alarm etc.</td>
<td>X</td>
<td></td>
<td>0-2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Trunking System</strong></td>
<td>Ladder track in the suspended ceilings and plant rooms. Cable tray and conduit in the retail area. Multipurpose/DADO trunking in office areas.</td>
<td>X</td>
<td></td>
<td>0-2 years</td>
<td></td>
</tr>
<tr>
<td><strong>Lighting Fittings</strong></td>
<td>Basic level of lighting provided in shop areas by landlord, all other fittings belong to respective tenants. External light fittings located under canopy. Illuminated signs fixed to façade.</td>
<td>X</td>
<td></td>
<td>0-2 years</td>
<td></td>
</tr>
</tbody>
</table>
| **Lifts and other Lifting equipment** | 1 No. lift (19XX)  
6 No. hydraulic lifts (2 new 20XX)  
6 No. escalators  
Inspections valid until June 20XX                                                                                                      | X      |                      | 0-2 years |           |
Appendix 1

<table>
<thead>
<tr>
<th></th>
<th>Description</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Fire Alarm</td>
<td>Voice-activated alarm. Fire inspection was carried out 8 Nov. 20XX.</td>
<td>X</td>
</tr>
<tr>
<td>Burglar Alarm</td>
<td>Exterior alarm system with IR-detectors and time-operated magnets. Each tenant has 1 No. IR-detector</td>
<td>X</td>
</tr>
<tr>
<td>Data/telecom Network</td>
<td>Owned and operated by tenant.</td>
<td></td>
</tr>
<tr>
<td>Cable TV/CCTV</td>
<td>None</td>
<td></td>
</tr>
<tr>
<td>Documentation</td>
<td>Documentation from 19XX had been revised 20XX but was not on site during inspection.</td>
<td>X</td>
</tr>
<tr>
<td>Other issues</td>
<td>Some installations were upgraded 20XX.</td>
<td>X</td>
</tr>
</tbody>
</table>

Cost Summary Measures

- Measures within 0-2 years
- Measures within 2-5 years
- Measures within 5-10 years ~ XX kSEK

Summary Electrical Installations

Electrical services are in a normal condition in relation to the year of construction. Some installations date back to the year of construction and should eventually be replaced.

Status Summary

- Poor
- Normal X
- Good
Appendix 2

Desktop Environmental Assessment
- soil and groundwater
Property
Yyyyy, Sweden

Stockholm 20XX-XX-X
Unr 6115XXXXXXXXX

General background and disclaimer
This report was prepared for the exclusive use of Xxxxx Properties and is intended to provide an assessment of environmental risk regarding pollutions in soil and groundwater due to present and historical industrial activities. Any use which a third party makes of this report, or any reliance on or decisions to be made based of it, are the responsibility of the third parties. Ramböll disclaims responsibility of consequential financial effects on transaction or property values, or requirements for follow-up actions and costs. The report is based on data and information collected through (when available): 1. archive study of the City Hall building records with building permits, planning permissions and drawings, 2. property register at the Swedish Ordnance Survey, 3. inquires and interviews with inspectors at the local Environmental and Health department, 4. inquires to the County Administration Board if the property or adjacent properties have been registered in the present register for known or potentially contaminated sites.

Except as otherwise may be requested, Ramböll disclaims any obligation to update this report for events taking place, or with respect to information that becomes available to Ramböll after the time during which Ramböll conducted the assessment.

Ramböll Sverige AB
Soil and Water Environment

Name xxxxx
Name xxxxx
Desktop Environmental Assessment  
- soil and groundwater  
Property  
Yyyy, Sweden

<table>
<thead>
<tr>
<th>Property name:</th>
<th>Address:</th>
<th>Post code and City:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property</td>
<td>XXX 45</td>
<td>774 55 XXxxx</td>
</tr>
</tbody>
</table>

Purpose of the assessment:
To present an overview of the history of the property and thereby an insight in possible contaminations on the site caused by previous activities. Based on the received information recommendations of further investigations are given.

Scope of assignment:
- Archive study of the City Hall building records with building permits, planning permissions and drawings.
- Inquiries and interviews with inspectors at the Environmental and Health Department in XXXXXX.
- Inquires to the County Administrative Board of XXXXX Län if the property is registered in their MIFO database (a database with potential contaminated sites or investigated sites according to Method of Surveying Contaminated Sites, Swedish Environmental Protection Agency, Report 4918).

Site description:
The property is located in Yyyy City. The property comprises a total area of 7 055 sqm.

Site history:
During archive studies, following information has been found (years represent years of application):
- 20XX, Building permit and building report for changed use of shopping mall
- 20XX, Building permit and building report for rebuilding of shopping mall

Present activity at the site:
Commercial property in an urban environment. The building holds a mall, office premises and a garage in two floors.

Previous environmental investigations concerning soil and groundwater:
No investigations have come to our knowledge.

Possible contamination/risks:
The local Environmental and Health department has nothing registered on the property regarding known contaminated soil or groundwater issues.

Evaluation:
During the demolishing of the old buildings and building of the supermarket in 2008 the property underwent extensive groundwork and large quantities of potentially contaminated soil have been removed. The chances that potentially contaminated soil has been left in the ground are probably very small.

The historical and present use of the property indicates that the risk of contaminants in soil and groundwater is low.

Conclusion and recommendation:
No further investigations are recommended.