Making the Right Contract Choice

A Study of AB 04 and ABT 06 in Office Construction Procurement in Gothenburg

Master's thesis in Design and Construction Project Management

Tobias Svantesson

DEPARTMENT OF Architecture and Civil Engineering
Division of Construction Management and Engineering

CHALMERS UNIVERSITY OF TECHNOLOGY
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MASTER'S THESIS ACEX30

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Examensarbete ACEX30
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ABSTRACT

The construction industry is one of the biggest sectors globally and face a recurring problem in budget overruns, often linked to flaws in contract writing and risk dividing between stakeholders. This thesis investigates the Swedish standard agreements AB 04 and ABT 06 and how these differ, how these address economic, social and qualitative risks and how the choice of contract form can affect the risk of a project breaching its budget. The study focuses on the construction of an office construction in Gothenburg and employs an abductive research approach to develop theories and generalizations to help the construction industry. The research is based on nine interviews with experienced industry professionals and the development of a theoretical framework. The findings of the research demonstrate that the the most fundamental difference between the AB 04 and ABT 06 lies in the project execution structures where AB 04 adopts a Design-bid-build (DBB) execution and ABT 06 involves a Design-build (DB) execution. Furthermore, the results display that the choice of contract form cannot be generalized for all office building but rather emphasize the need to understand the nature of the project and the clients' internal resources for design and planning. Also, the findings underscore the significant role of collaboration in ensuring project success.

Key words: AB 04, ABT 06, Design build, Design bid build, Office building, Standard agreements, Collaboration, Project success.

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Preface

This Master thesis has been performed during the spring 2025 as a part of the Design and construction project management master program at Chalmers University of Technology. The thesis has been conducted together with PE Teknik och Arkitektur and aims to investigate the AB contracts and how the different contracting forms affect construction of office building in Gothenburg.

PE Teknik och Arkitektur came with a suggestion to investigate if any of the contract forms of procurement are more beneficial for the client. Throughout the work I had priceless help from supervisor Rasmus Rempling and PE supervisor Peter Andersson who provided me with literature and contact information to the interviewees.

Finally, I would like to thank all the interviewees whose contribution made this thesis possible, and all my coworkers at PE Teknik and Arkitektur who gave me a lot of valuable learnings and insights during the spring.

This work has given me a deeper understanding of the practical applications of the AB contracts and an insight into the construction sector.

Gothenburg June 2025

Tobias Svantesson

Notations

BBR	Boverkets building regulations
ÄTA	Changes, Additions and Deductions
GDP	Gross domestic product
LOU	The law on public procurement
DB	Design Build
DBB	Design Bid Build
AB 04	Agreement form for design bid built contract
ABT 06	Agreement form for design built contract

Definitions

Successful: Successful in the meaning of a construction projects is a project that satisfies customer demands and adhere to the budgeted time and costs (Hansson & Persson, 2009).

Fault: Faults are tasks that have not been completed at all or not completed according to standards agreed within the contract (Ryning & Svensson, 2024).

Price base amount: Price base amount is a governmentally regulated amount that reflects the price development in Sweden (Visma, 2024). It is used for taxes, pensions, and other fees and is currently 58 800kr (Försäkringskassan, 2025).

Interests: Interests is "the price of money" and is used to compensate for the increasing inflation in society (Sjöstrand, 2008).

Contractual fines: Contractual fines are a sum of money that is to be paid if an injunction or prohibition isn't followed or performed in a wrongful way (Boverket, 2023 c).

Damages: Damages are a compensation for damage than has been inflicted by a part on persons, property or financial. These are limited to 15% of the contracted sum but cannot be called for if contractual fines have been implemented in the contract (Prima Advokatbyrå, 2024).

Compensations: Compensations are payments to the contractor to compensate for unforeseen costs (Byggandets Kontraktskommitte, 2018)

1 Introduction

The construction sector is one of the leading industries globally and plays a crucial role in national economies. In Sweden, it accounted for about 17% of the GDP (Boverket, 2025). However, the industry faces persistent challenges, particularly in delivering projects successfully. Brunes and Lind (2015) indicate that 86% construction projects around the world experience budget overruns, leading to major financial losses. These overruns often are results of poor project planning, poor management, and a lack of experience with contracts (Vaardini, 2016).

On top these longstanding challenges the construction industry has gone through a tough period since the outbreak of covid-19 and has been adversely affected by the economic crisis that came with it. The economic downturn in Sweden has affected the construction sector through increased material costs and heightened interests from Riksbanken (Andersson, 2024). This has led to a decline in active projects and financial instability which has made ensuring cost control and financial predictability more critical than ever.

Despite the significant budget overruns, there is limited research on how choosing the right contract forms can address the issue of budget overruns. Therefor it is important to cover the gap in literature that exists to enhance the knowledge regarding the different contracting forms, which one fits the specific client best and how different contracts allocate risks and responsibilities in different ways.

1.1 Aim

The aim of the thesis was to investigate how AB 04 and ABT 06 differ from each other and how these differences affect the outcomes of an office construction project in Gothenburg. The research involved an investigation of economical, qualitative, and social differences to give clients a better understanding of the different contracting types and how they affect their projects to ease their choice in the procurement phase.

1.2 Research questions

- How does AB 04 differ from ABT 06?
- What are the key economic, qualitative, and social differences between various contracting forms?
- How aware are private clients of the differences between the contract forms?
- How does their knowledge affect their choice of contract form when planning an office building?
- What contract form is most beneficial for office buildings?

1.3 Limitations

Time is a big limitation of this project as it is limited to the spring semester at Chalmers. Therefore, several limitations have been made in accordance to the time that is available.

The scope of this master thesis has been limited to which contract form is the most advantageous when constructing an office building. This limitation was chosen to narrow the research down to one single type of construction as different types of constructions have different needs and looking into how all different types of projects would function with different contracting types would be a to large scope for the time frame of the master thesis.

The scope has also been narrowed down to focus on private clients as they have a bigger freedom in their choice of contracting type than public clients. Public clients are bound by LOU and are therefore more restricted in their procurement (Upphandlingsmyndigheten, u.d.). Therefor private clients will be a better focus point when looking into what contracting form they should choose.

To further narrow down the scope, the research has been limited to the Swedish market, and particularly the Gothenburg area. This limitation was chosen as the project will be performed in Gothenburg, and most interviewees will be stationed in Gothenburg and will most likely have more experience of working in Gothenburg.

1.3.1 Limitation impacts

Several of the limitations that were set to this thesis has impacted the outcome. One of the biggest limitations is time. The time frame was approximately 4 months to complete the thesis which limited the thesis to a certain scale that resulted in several of the other limitations. One of the most apparent limitations that the time-limit brought was the number of interviews that were held. The interview study was conducted with 9 interviewees which gives a quite small number of views to correctly perform a generalisation of how the field thinks regarding the contracting types. A bigger number of interviewees would have given a broader view of the field and could have given another result. A bigger time frame could have opened the room for more interviews. This could have resulted in that the thesis could have been more generalized for the entire field more than focusing on an office building. A bigger time frame could also have allowed for further theoretical studies that could have brought more valid literature to the thesis to further verify the results. The limited time frame also resulted in to not perform a case study since projects are so different in their nature and no project is the other like. This gives a complexity in performing a comparison between two projects and because of this and the lack of time this part was removed. The case study would have contributed to a research where past projects could have been analysed to get an understanding of how the choice of contract form affected the project outcomes in those specific projects.

1.4 Sustainability

The thesis holds sustainability as it aims to give knowledge to clients regarding what aspects they should take into consideration when choosing contracting form for a future project. By giving the client more knowledge this thesis hopes to reduce the number of projects breaching their economical budgets and so forth receiving economical sustainability. Furthermore, this thesis can serve as a starting point for future research regarding the AB contracts and a base for a comparison study between the AB contracts as they exist now and the new AB contracts arriving in 2025.

2 Methodology

In this section, the methodologies applied during the master's thesis will be presented and discussed. The section begins with an explanation of the methods applied followed by explanation of the chosen research approaches, outlining the reasons for their selection and their relevance to the thesis. It will then describe the analytical stages involved in the research process and ethical considerations.

2.1 Research

The research for the master thesis was performed through a qualitative approach containing a three-step process including a development of a theoretical framework and an interview study and a case study. These studies were conducted to create a base from which a thematic discussion of the strengths and weaknesses of AB 04 and ABT 06 was performed together with which of the contracts to choose for office constructions. The study was performed according to abductive reasoning which is a method that involves a qualitative data collection for observation and reviewing to gain deeper insights or theories that are not straight forward. This way of working was chosen as the area of investigation is constantly evolving and abductive reasoning is particularly adaptive for these types of investigations (Stewart, u.d).

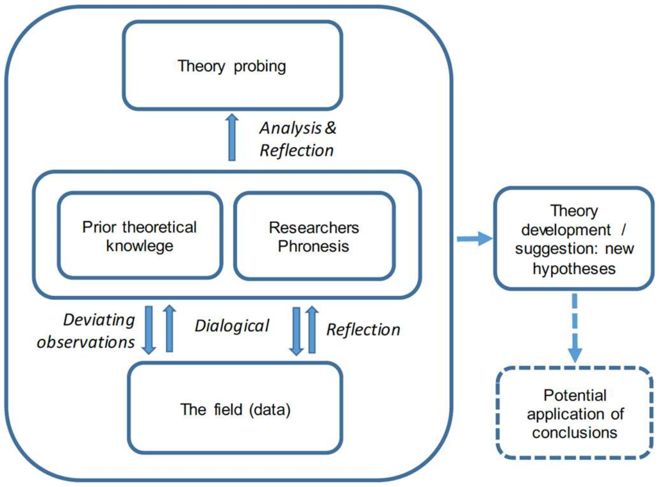

Figure 1: abductive reasoning (Stewart, u.d)

2.1.1 Theoretical framework

The theoretical framework was created through a literature study including a two-step approach with a literature search and review. The literature search involved a search for academic papers, for organisation websites, for articles and field relevant books. To find relevant sources search engines such as Google Scholar, Scopus, Chalmers Library, and Mendeley were used together with provided material from supervisors. This was followed by the literature review of the found articles. A literature review is according to Bell (2022) a "critical examination of existing research relating to the phenomena of interest and relevant theoretical ideas". The literature study was conducted to create an understanding of the different concepts involved in the construction sector and to be able to form valid questions for the interview study and to help increase the knowledge of the differences, strengths and weaknesses of the AB 04 and ABT 06.

2.1.2 Interview study

The interview study was conducted to gather information from the field regarding the knowledge of contractual forms and their application together with professional's view on the topic. The interviewees were chosen from a perspective to gain a broad knowledge of the field, and thus were chosen from both a client, contractor and consultant side. The interviewees also had different roles, roaming from consultant to legal officer to understand how the knowledge differentiates between different roles and to get their take on how the different contracting forms affect a construction project. Information regarding what interviewee has what role is displayed in table 1.

The interviews were performed both in person but also online through teams and most interviews were recorded and transcribed. They were conducted in a semi-structured manner to allow for questions that came up during the interviews and to create an environment to get more honest answers. The questions used for the interviews were created based on the knowledge gathered in the literature study and is available in Appendix A-D.

Table 1: Interviewee information

Interviewee	Role in the construction sector
Interviewee 1	Client
Interviewee 2	Consultant
Interviewee 3	Client
Interviewee 4	Client
Interviewee 5	Legal officer
Interviewee 6	Client
Interviewee 7	Contractor
Interviewee 8	Contractor
Interviewee 9	Consultant

The first interviewee has a background from Väg och Vatten at Lunds Tekniska Högskola (LTH). After completing studies in 1995, the interviewee worked in the construction and real estate industry in various ways from pinnapojk and trainee to construction engineer and project manager. He has been involved in lots of projects including the Point in Hyllie, Karlatornet in Gothenburg as well as small residential buildings and larger apartment complexes. Throughout his career a very broad experience of housing, commercial and agreements, both land allocation agreements and leases, has been gained. However, he has almost extensively worked with ABT 06 contracts.

The second Interviewee began his career in the construction industry in 2008 and has since worked in both the public and private sector. Right now, the interviewee is working as a consultant in project management and construction issues and has worked with most of the agreements and regulations there are in the construction industry. The interviewee often also acts as a representative for clients and helps them in the creation of contracts and procurements.

The third interviewee is now retired but before retirement, has worked as a technical and environmental manager for 6 years. After that, the client was Deputy Investment Director for Investments in new construction business. The interviewee has also worked as a technical consultant in the construction industry. In addition to this, the interviewee has a connection to Chalmers where he has been an adjunct professor. Additionally, the interviewee is also a chairman of the Construction Contract Committee, which composes the AB contracts and is currently in the process of composing the new AB 25 and ABT 25. During the interviewees career, both types of contracts have been worked with, but he has gained more experience of working with ABT 06 contracts.

The fourth interviewee works as a property manager and is responsible for the building structure of properties (roofs, walls, etc.). The interviewee has previous experience as a project manager and unit manager within the municipality sector and over 30 years of experience in distribution orders. During his career, the interviewee has worked towards AB 04 and ABT 06 but sees that the interviewee is still not such an experienced client.

The fifth Interviewee is a General Counsel on the consultant side and has worked with legal questions and the AB contracts for over 20 years. She has mostly been involved in AB 04 and ABK 09 contracts rather than the ABT 06 contract but still has knowledge regarding the ABT 06.

The sixth interviewee is a senior within the construction industry and has worked in the industry his whole career. The interviewee started out as a craftsman and has since worked in construction but also in management. He is currently working as a project manager on the client side and has been in this role since 2007. The interviewee has worked with both AB 04 and ABT 06 throughout his career but during the last years he has mainly worked with ABT 06.

The seventh interviewee is currently working as a project manager and has been in this position since 2006. The interviewee has been active within the sector since 1997 when the interviewee graduated from Chalmers and has during that period worked on both the contractor side and the client side. The interviewee has worked with both small and big projects ranging from schools to office buildings and has worked with both AB 04 and ABT 06 contracts but also with international contracts.

The eight interviewee has worked as a project manager on the contractor side since 2000 and currently works with the early stages of a project, businesses and tenders. The interviewee has over 25 years of experience from the contractor side and has during that time worked with projects regulated by AB 04 and ABT 06. He also has a background at Chalmers and the department of Civil engineering.

The ninth interviewee has a background as a craftsman but has for the last six years worked as a project manager on the consultant side.

2.1.3 Case study

The case study was conducted to get an understanding of how the different contract forms affect a project outcome in real numbers as a contrast to the literature findings. It was performed through analytical research of prior cases performed by PE Teknik och Arkitektur.

2.2 Thematic analysis

"Thematic analysis is a set of methods for developing and interpreting patterns of meaning across qualitative data." (Braun & Clarke, 2023). This type of analysis is a pathway for analysing data from several different fields through the transformation of data into insights and meaningful patterns. This is according to Delve & Limpaecher (2020) performed through a six-step approach including familiarizing with the data, generating initial codes, collating codes with supporting data, grouping codes into themes, reviewing and refining themes, and producing the report.

Thematic analysis was used in this report to get a better understanding of the experiences of the interviewees and to find patterns between these interviews and the gathered results from the theoretical framework. To perform this analysis a qualitative data analysis software called MAXQDA was used. MAXQDA is a software that allows the user to transcribe and code interviews for an easier and smoother analyse (MAXQDA, u.d.).

2.3 AI

AI and ChatGPT was used for translation of words from Swedish to English, to correct grammatical errors and to improve the structure of the thesis. Further than that ChatGPT was used for consulting and inspiration on how to visualise different results in tables or figures. Some common inputs were "Translate this word English", "Check this part for grammatical errors", "how could I improve the structure of this part?" and "How would you present this info in an academic paper?"

2.4 Ethical considerations

This study was conducted in accordance with established research ethics principles with particular focus on ensuring that information was gathered in a correct way and confidentiality and integrity of the interviewees were held. Before the interviews the interviewees where asked if they wanted to participate and asked if it was okey if the interview was recorded and transcribed. The transcribed data was after the completion of the thesis deleted from all software to ensure confidentiality of the participants. Furthermore, any information that could link any of the interviewees to the gathered information displayed in the thesis was anonymised to prevent identification of the individuals.

3 Theoretical framework

In this chapter a Theoretical Framework will be presented. The framework is built from a literature study on articles, journals and other documents found and will help analyse the results from the interviews and enhance the knowledge regarding AB 04 and ABT 06. The section will begin with a brief introduction of contracts in general and will be followed by contracts in the construction sector, AB contracts, ÄTOR and an explanation of the construction process and the tendering process.

3.1 Contracts

A contract is an agreement between two or more parties which controls the terms in which the parties are involved. It is a promise to perform something that has been agreed upon and can be designed either verbally or in writing (Cornell Law School, u.d.). No matter how the contract is designed, it is legally binding, and a breach of a contract can lead to legal consequences. Although contracts are legally binding no matter how they are formed, written contracts come with lower risks than verbal contracts as they are documented and contain all details of the agreements. This neglects the necessity to rely on someone's word and provides proof that can be used in a court of law (Downey & Associates, u.d.)

3.2 Contracts in the construction sector

Contracts are fundamental points in the construction sector and inexperience regarding managing contracts is a common reason for budget overruns in construction projects (Vaardini, 2016). Therefore, the knowledge of contract types is fundamental when procuring a construction project.

In the construction industry, contracts are made to withhold all agreements that are set in the start. The contracts are created to provide clear descriptions of each involved parties responsibilities and bind each party to their duties. The contracts can also be conducted to establish a clear time frame and for resolving disputes that arise during a project as well as securing payment for the performed work (Coutu, u.d).

3.3 Contracting forms

In the construction industry, contracts are formal agreements created to steer construction contracting, which is a commission where a client orders a task from a contractor to perform some kind of construction project big or small (Gorton, 2011).

There are two usual types of contracting forms, Design-Build (DB) and Design-Bid-Build (DBB). These two contracting forms separate from each other in who is responsible for the design phase. In the DB contract, one entity is responsible for the entire process from design to construction, while in a DBB contract, the design phase is separated from the construction phase (Park & Hoon Kwak, 2017). In Figure 2, provided by Dr. Keith Molenaar, University of Boulder, these two delivery method paths are described to visualize where the contractor selection is performed for each path (Park & Kwak, 2017).

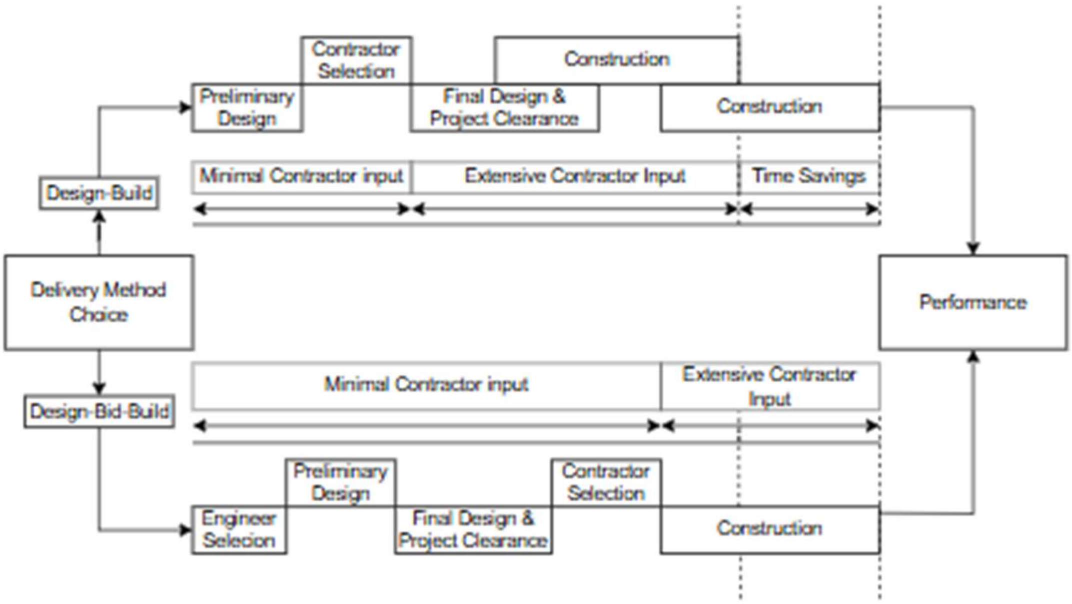

Figure 2: Delivery method paths (Park & Kwak, 2017).

3.3.1 Design-Build contract

The design-build (DB) concept has its origin in the "master builder" concept which has been in use for over 4 millenniums. At this time people hired a master builder to take full charge of the construction from designing to constructing (Cushman & Sperling Taub, 1992). This form of design-build was first invented after World War 2 and was at that time often offered as a package deal by the contracting firms. The Package deal had a slow start to its emergence due to the uncertainties it brought both for employers and contractors. For employers, it was an uncommon way of working, they had low expertise in obtaining competitive tenders, and at that time there were relatively few architects and engineers who were willing to work in that way. This caused contractors to use in-house personnel for engineering and architecture which lowered their grade of expertise and so forth minimized their quality. For Contractors there was a problem with marketing as the problems for employers emphasized, the concept was uncommon, and so forth contractors had a hard time locating work. This caused a need for high staff turnovers which affected their efficiency, morale and quality (Janssens, 1991).

Nowadays, the master builder is what we consider a contractor. The contractor is a person or company that takes responsibility for delivering a service or job (Cambrige dictionary, u.d.). In design-build the client engages in a contract with one contractor who takes responsibility for the design and construction phase as shown in figure 3 (Holtier Coury & Frisa, 2024).

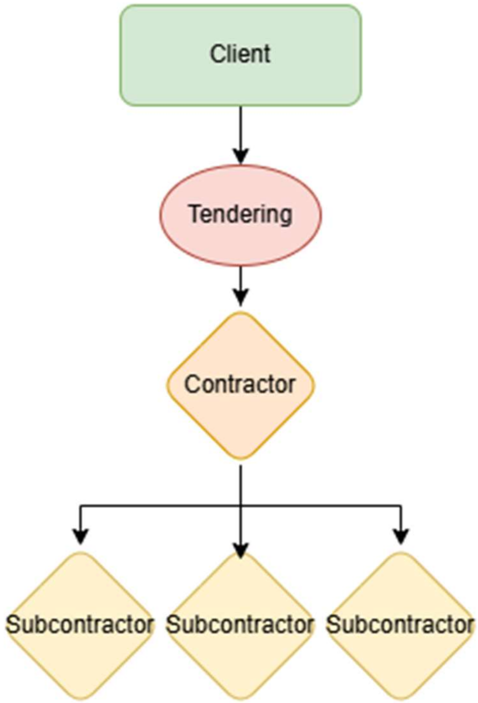

Figure 3: Design-build structure

DB has grown into a commonly used delivery method with advantages in schedule acceleration, innovation, and risk management (Lahdenperä, 2024). It has grown into a popular method as it diminishes the work of the client and reduces the number of contracts to one. This gives the contractor responsibility over the project which reduces the risk for the owner. It does also give the contractor the possibility to overlap the design-phase with the construction phase which can save time and potentially costs (Kubba, 2010).

The DB contract does also allow change upon design errors without formal change-orders which in turn is a minimizer of project risks as change orders are sources of budget overruns (Park & Hoon Kwak, 2017). The DB process does also have its disadvantages in loss of control, design-quality and in the procurement phase as cost-estimations can be hard to predict from preliminary design (Kubba, 2010).

3.3.2 Design-Bid-Build Contract

The Design-Bid-Build (DBB) is the most common project delivery method and is often referred to as the traditional project delivery method and has been in practise for centuries and was the general method until DB emerged. The DBB method differs from DB as it separates the design and construction phases, utilizing different entities for each stage. The process as shown in figure 4, begins with the selection of an architect or engineer to develop a complete design (Kubba, 2010). This design includes detailed plans, specifications, and project requirements that guide the bidding process and reflect the client's vision (Levy, 2010). However, since the contractor is not involved during the design phase, there is a risk that submitted bids may exceed the client's budget, potentially necessitating a redesign. This, in turn, can increase both project costs and the overall schedule (theforakergroup, u.d.).

Another challenge arises from the completeness of the project scope. If the design is not fully developed before being issued for bidding, changes may be required during construction, leading to costly change orders. Additionally, the sequential nature of DBB extends the overall project schedule, as construction cannot begin until the design phase is finalized. However, this separation also simplifies project management, as the client only needs to oversee one phase at a time (theforakergroup, u.d.).

Despite its extended timeline, DBB offers some advantages over DB, particularly in terms of client involvement. During the design phase, the client plays an active role, working closely with the designer to influence the outcome. This level of involvement allows for greater control over project details before construction begins (theforakergroup, u.d.).

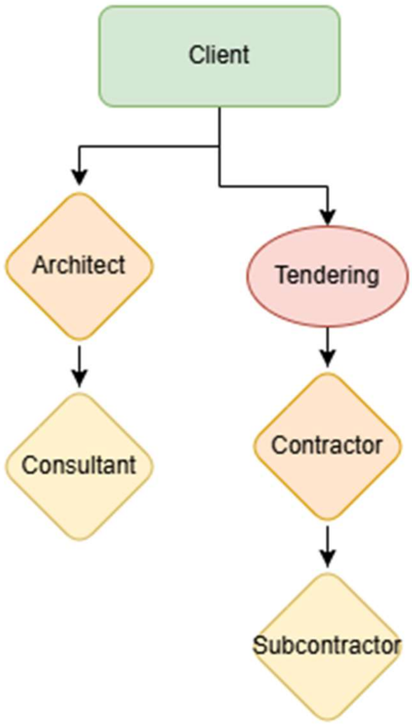

Figure 4: Design-Bid-Build structure

3.4 AB contracts

The AB contracts are Swedish agreement forms in the construction sector provided by Byggandets Kontraktskommitté (BKK). BKK is a member-driven organisation which works with the drafting of law-related regulations and publications like the AB contracts (Byggandets Kontraktskommitté, u.d.). These are agreements that are used in private and public contracting projects and exist to create the best possible premises for all parties involved (Byggherrarna, u.d.). There are multiple different types of AB contracts, which specify different ways of performing projects. These exist to ease contracting for all parts in the construction sector and are created in such a manner that they are applicable in all types of contracting forms. The most used ones are AB 04 and ABT 06, which are types of DB and DBB contracts (Byggandets Kontraktskommitte, 2018). These contracts are agreement forms and contain generall conditions, which means there is no need to strictly follow these regulations (Ryning & Svensson, 2024).

3.4.1 AB 04 and ABT 06

AB 04 and ABT 06 agreement forms are designed to assist parties in drafting agreements that define the general conditions of DB contracts and DBB contracts. The AB 04 is constructed from three fundamentals, calculability, comparability and simplicity. These three are premises of the AB 04 and form the regulations to be so simple that all possible tenderers can make use of them, so clear that contractors can assess an estimated price and clients can compare the different offers (Rådberg, 2011).

It is not mandatory for parties to include all parts of the AB 04 or ABT 06, and parties are so forth free to make additions or deductions from the regulations. Although as AB 04 and ABT 06 regulations build upon a reasonable balance of risks, alterations to the regulations will result in the risks being pushed, which will affect the costs for either clients or contractors. This effects the entire sector as cost losses needs to be addressed in other projects which creates a vicious circle and so forth the sector would benefit from low alterations to risk dividing's (Rådberg, 2011). If, although deciding to make additions or deductions from the regulations, conflicts might arise in different documents and in that case AB 04 and ABT 06 describe a specific order to follow which is described in table 2 (Byggandets Kontraktskommitte, 2018).

Table 2: Orders to follow incase of contradictory information for AB 04 and ABT 06 (Byggandets Kontraktskommitte, 2018)

AB 04:	ABT 06:
Contract	Contract
Changes in AB 04 which are included in compilation in administrative regulations	Changes in ABT 06 which are included in compilation in administrative regulations
AB 04	ABT 06
Orders	Orders
Tender	Tender requests
Special measurement and compensation rules	Request Documents
á-price list	Other Documents
Supplementary regulations for the contract provided before the submission of the tender	
Unpriced bill of quantities	
Descriptions	
Blueprints	
Other documents	

However, if the parties agree to use AB 04 or ABT 06, the contractor is obligated to carry out the construction according to the regulations described. These regulations contain information on Scope, Execution, Organisation, Time, Responsibilities and remedy, Economy, Inspection, Conflict resolution, and Simplified dispute resolution (Byggandets Kontraktskommitte, 2018).

3.4.1.1 Contractual obligations

The AB 04 proposes various contractual obligations, many relating to the scope. The scope is perhaps the most important part of the AB 04 as it describes the outline of work and liabilities of each party in the project. This highlights the need for clear tender documents that clearly state what the client expects of the contractor, as work that is not declared in the tender documents do not fall within the scope of the contract (Rådberg, 2011). The tender should thereby be complete with descriptions of contract work and prices and be so clear that the there is no room for interpretation (Hedberg, 2013).

For ABT 06 the regulations regarding the scope of the contract are also fundamental and covers the function of the building as the contractor oversees the whole contract from investigations to design and until the inspection is complete. During this period the contractor is free to perform the contract in a way that is fitting but is at the same time forced to oblige to the tendered function and special technical solutions. For this reason, the quality of the contractors' investigations before the bidding process is extra important as it will be the basis of their tender (Byggandets Kontraktskommitte, 2018). Apart from the contractor's responsibility of performing an investigation, the client has a great responsibility of describing demands of functions and technical solutions that are wanted. This is necessary as requirements that are not specified may not be met (Hedberg, 2013).

Even if there aren't any specifications on specific functions or quality requirements AB 04 and ABT 06 mandates the contractor to carry out the work in a professional manner. It is also mandatory for the contractor to develop quality and environmental plans and specifically in ABT 06, there is a need for the contractor to include prescriptions on quality and environment that are provided by the client in the tender documents (Byggandets Kontraktskommitte, 2018).

To perform the contract in a professional manner there might in AB 04 be work that is not covered in the contract. So, fourth contractors can perform four other types of work during a construction contract that are legally defined according to AB 04, which are explained in Table 3. For ABT 06 there is no work covered in the contract as it only defines a function that is to be reached, these kinds of works can be stumbled upon in such a contract as well (Willborg, 2021).

Table 3: contracting works, and their explanations (Willborg, 2021).

Work type	Explanation
Temporary works	Certain tasks that are necessary to perform the contracted work and is removed after the contracted work is completed.
Detail work	Work that are essential to build a functioning building.
ÄTA-Works	Work that address Changes, Additions and Deductions, these are further described in chapter 3.4.

Rectification works	Adjustments to defects that have been noticed by inspector or contractor.

AB 04 and ABT 06 does also include aspects of time, responsibilities and rectifications, economics, inspections, terminations and dispute resolutions together with how these are to be followed (Byggandets Kontraktskommitte, 2018).

The time chapter states that the contract should be finished within the time frame that is stated in the building contract. The contractor is obligated to adhere to the set out time if no obstacles or ÄTA-work are demonstrated, then the contractor can be allowed more time as displayed in figure 5. In AB 04 the client is involved in setting the time frame that is to be followed, while in ABT 06 the contractors have more control over the timeframe (Maleon, u.d.). Even if the contracted time binds the contractor to the building process for a certain amount of time, there is a responsibility period which binds the contractor for an additional 10 years including a warranty period of 5 years (Ryning & Svensson, 2024).

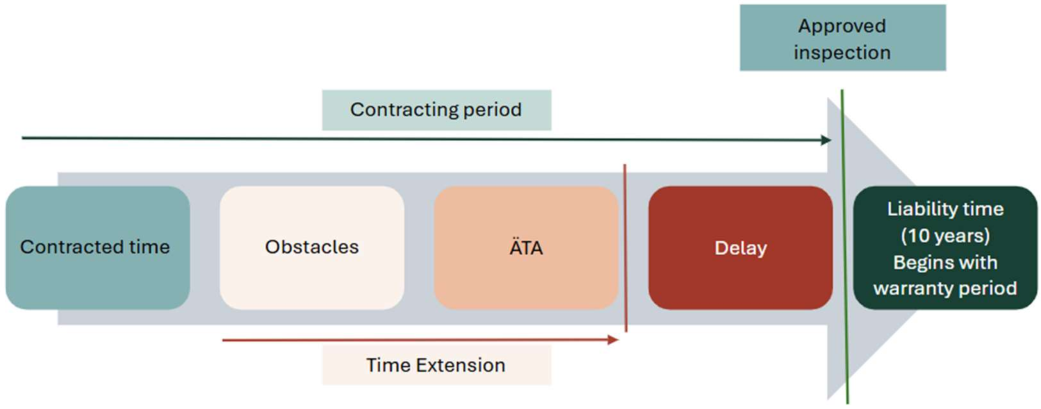

Figure 5: Translated version of ab04 Times of Contracting (Ryning & Svensson, 2024)

The contractor is responsible for faults and damages that arise during the contracting period and warranty period, which includes 5 years for work performed and 2 years for materials, unless certain conditions are occurrent. These include acts of war, terrorism, natural disasters or rebellions that may have caused damage to the contract and are also the conditions that can allow a longer contracting period. The contractor is also responsible for faults or damages that arise up to 10 years after the contracting period if obvious cases of recklessness are apparent. Apart from being responsible the contractor has a responsibility to address faults that occur within 2 months of detection (Byggandets Kontraktskommitte, 2018).

To make sure these obligations are met, both parties are required to appoint a representative and attend both startup- and construction meetings throughout the process. Apart from these securities during the construction, the inspection is the final assurance that all contractual obligations have been met. An inspection can also be called for during the project if the parts want an assessment of the work performed of a certain work that reoccurs in a large number, these are often called standardized pre-inspections (Byggandets Kontraktskommitte, 2018). These are performed to detect flaws in work, and to address them in time to reduce costly rectification works later in the process (Vasa Advokatbyrå, u.d.).

3.4.1.2 Financial & Legal Consequences

Financial and legal consequences are a big part of the AB contracts as these are regulations that keep client and contractor in line. They describe how to go forth when one part has breached their end of the agreement or extra work has been performed and what consequences can be taken (Byggandets Kontraktskommitte, 2018).

Financial consequences address the economical actions that can be taken when a part doesn't withhold their obligations or have done more than agreed and include interests, contractual fines, damages, and compensations. These different types of financial consequences can be adapted to address the action displayed in table 4 (Byggandets Kontraktskommitte, 2018).

Interests are according Magnus Sjöstrand (2008) "the price of money" and is used to compensate for the increasing inflation in society. It is used as a pushing factor to ensure on-time payments and to create a guarantee for the creditor to not be affected of the value loss of money. Interests are used if payment of a work isn't provided within the right time. The interest that is owed is then supposed to be based on Räntelagen (1975:635) (Byggandets Kontraktskommitte, 2018).

Contractual fines are a sum of money that is to be paid if an injunction or prohibition isn't followed or performed in a wrongful way (Boverket, 2023 c). AB 04 and ABT 06 describes how contractual fines can be agreed upon in the contract for different possible happenings and how these usually are decided as a part of the contract sum or as a fixed sum delt for every prolonged week (Byggandets Kontraktskommitte, 2018).

Damages are a compensation for damage than has been inflicted by a part on persons, property or financial. In AB04 these are limited to 15% of the contracted sum but cannot be called for if contractual fines have been implemented in the contract (Prima Advokatbyrå, 2024). This also implies for ABT 06 but doesn't apply to either if the responsible has a higher insurance (Byggandets Kontraktskommitte, 2018).

Compensations are payments to the contractor to compensate for unforeseen costs (Byggandets Kontraktskommitte, 2018).

Table 4: Actions that allow financial consequences and what type it inflicts (Byggandets Kontraktskommitte, 2018)

Action:	Type:
Time overruns for the contract in whole or in parts.	Contractual fines or damages
Rectification works for faults not caused by the contractor.	Compensation
Costs caused by reckless conduct of the contractor.	Damages
Costs caused by obstacles that could have been foreseen, addressed or avoided by the client.	Compensation

Legal consequences address the legal actions that can be taken when a part doesn't withhold their obligations. If the obligations are not followed all parties have the right to terminate the contract. AB 04 and ABT 06 describes all reasons for when a client or contractor can terminate the contract and David Magnusson (2011) recognizes five actions for AB 04, which are displayed in table 5, as main reasons for termination of contracts.

Table 5: Reasons and explanations for termination of contracts (Magnusson, 2011)

Reason AB 04:	Explanation
Delay	The contract cannot be completed within the contracted timeframe.
Wrongdoing	Completed parts of the contract have not been completed according to contracted standards.
Failure to pay	Client fails to pay in time according to contracted terms.
Bankruptcy, insolvency, and insufficient security	One part enters bankruptcy or in other ways cannot commit to their obligations with sufficient security.
Assignment of the contract or the construction work	The contractor re-assigned the contract without the client's approval.

AB 04 and ABT 06 although describes how a dispute that has been pushed to court is not a reason for termination. AB 04 also describes how to then proceed in cases of disputes that cannot be solved at site and emphasizes the use of a commonly assigned arbitrator to solve the conflict (Byggandets Kontraktskommitte, 2018).

3.4.2 Other AB contracts

Apart from AB 04 and ABT 06 there are AB contracts that serve for other types of contracting. These are ABK 09 which is a consulting contract, ABM 07 which is a contract for consummation of materials, AB-U 07 and ABT-U 07 which are subcontracts, and ABS 18 which is a contract for small-residential-contracts. Apart from these there is also a contract for craftsmen, and it is called Hantverksformuläret 17 (Byggandets Kontraktskommitte, 2018).

3.5 Changes, Additions and Deductions (ÄTA)

In the construction industry changes to the scope are common and all changes require work being performed in some way. This work is what is called ÄTA, it involves all changes, additions and deductions to the contracted scope from the contract signing to the final inspection. ÄTA-works appear in both AB 04 and ABT 06 contracts and surfaces in two ways, either when a client orders a change to the scope these are called ordered ÄTA-works, or when contracted conditions don't meet the actual conditions these are called equivalent ÄTA-works (Sager, 2014). While these are the two ways ÄTA-works may surface, Nyman & Johnsson (2019) recognize poor competence among clients, deficient tender documents and incomplete architectural designs as the prime reasons for ÄTA-works. These faults often arise due to limitations in time and budget during the tender, and procurement phase (Eidem, 2022).

Rules for ÄTA-works differ between the two different kinds of ÄTA-work and between the different contracting types. This is not always known by contractors and clients and often not considered in construction projects. For ordered ÄTA-works in AB04, there is a need for these to be formed in writing while this is not necessary in ABT 06. This implies that ÄTA-works in ABT 06 can be performed through a handshake, or a misunderstanding. To address this, every ordered ÄTA-work needs to proceed a two-step process which includes informing the client in writing and decision making from the client whether it should be performed or not (Eidem, 2022).

For ÄTA-works that arise due to that contracted conditions don't meet the actual conditions there is no need to order the work, but there is a need for the contractor to inform the client on which ÄTA-works are to be performed, and what costs there are connected to these. For this type of ÄTA, AB 04 requires the contractor to inform and await answer from the client before starting the work if it exceeds half a price base amount. If it doesn't exceed half a price base amount there is no requirement to await response from the client. For ABT 06 there is neither no obligation to await response from the client as the contractor is responsible for the entire contract (Eidem, 2022).

If these requirements are not followed there is no guarantee that the contractor is given additional payment for the work performed. The payment might also be questioned by the client if the client sees the ÄTA-work to be included in the contract from the beginning. In this aspect of ÄTA-works, for whom the burden of proof lies with differs between the different types. For ordered ÄTA, the burden of proof lies with the client, while for work that arise due to that contracted conditions don't meet the actual conditions the burden of proof lies with the contractor (Eidem, 2022).

3.6 The building process

The building process is the process of construction projects, and it involves all steps from the first idea to the completion of the building. The building process contains 3 processes, the planning and design process, the production process and the management process as visualized in figure 6 (Kahrimanovic, 2020).

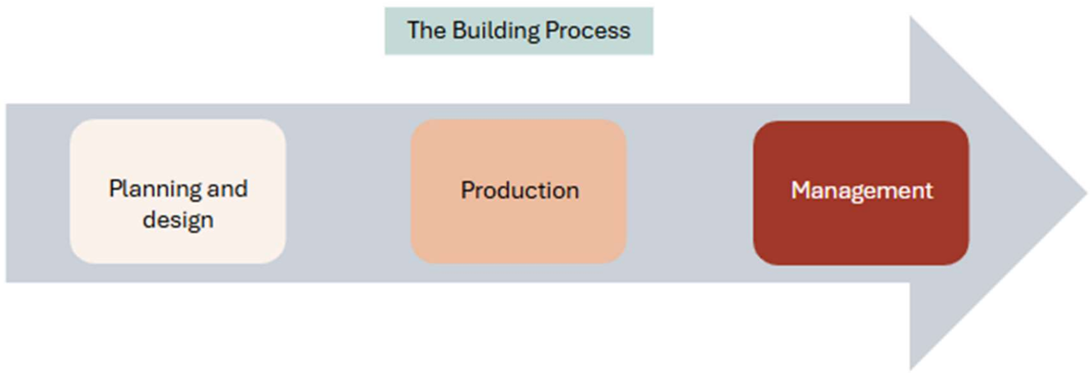

Figure 6: The steps of the building process

3.6.1 Planning and design process

The planning and design process is the first step of the building process and starts of with a preliminary study which itself starts with a first idea or vision of a project that could be performed. During the pre-study important investigations are performed by the client to decide whether to move on with the project, and to make predictions on time and costs (Kahrimanovic, 2020). This is a complicated task as changes in the construction environment are common, and so forth it is hard to make predictions (Yun et .al., 2014). To achieve the best results possible, clients often hire consultans to perform certain tasks during the pre-study for areas where they do not have the competances (Byggfakta, u.d.-a).

Logicstical investigations regarding municiplaity decisions are one part of the investigations that needs to be performed to understand whether there are detail plans for the chosen area and how the space is to be aqcuired (Byggfakta, u.d.-b). The detail plan is a plan for the area that the municiplaity has formed as a guideline for how they want their city to be shaped. In the detail plan there are often decisions on how water and land are to be used and what enviromental consequences there are to building in that spot (Boverket, 2022). If there is a detail plan then the client need to adhere to the demands that are stated in the plan and make sure that the project fits within the plan (Byggfakta, u.d.-b).

Moreover, the fundamentals of the project such as the size, cost and time are decided in this phase together with what functions are necessary and if there are any specific technical solutions that are to be implemented are formed in this phase (Byggfakta, u.d.-c). At the end of this phase the client will from the information that has been gathered, decide what type of contracting is to be used, DB or DBB. For DB project this phase is the basis for the tendering process of contractor, and requires clearly stated functions and techniqal solutions of the design to receive accuret bids (Byggfakta, u.d.-a).

The design and planning phase follows the preliminary study phase and is either performed by the client and consultants or by the contractor and subcontractors depending on whether a DBB or DB execution has been chosen (Al-Saadi & Yas Khudhair, 2021).

In this phase the preliminary design documents are formed (Kahrimanovic, 2020). These are documents that contain blueprints and descriptions that inform about all demands, needs and wishes the client has on the building. These are performed through further investigations of areas which are displayed in table 6.

Table 6: Examples of investigations that can be performed during the planning and design phase (Boverket, u.d. -a).

Area:	Description:
Geotechnical investigations	Investigations to determine soil, rock, and groundwater conditions for decision making of technical solution for foundation and reinforcement (Statens Geotekniska Institut, 2023).
Acoustic investigation	Investigations on surrounding sounds to locate the sources to be able to

	design accordingly to minimize the disturbance and reach the demands set by BBR (Arbetsmiljöverket, 2025).
Fire protection investigation	Investigations on different aspect connected to fire including protection, spread, emergency exits and maintenance (Boverket, u.d.-a)
Daylight analysis	Investigations on how daylight and natural light enters the building. It is used for design of technical solutions to maximise daylight admission and minimize glare and overheat (ERKE, u.d.).
Moisture safety design	Investigations on protection against moisture (Boverket, u.d.-a)
Energy demand calculation	Investigations on energy performance to ensure that demands in BBR are met (Boverket, u.d.-a).
Structural documentation	Investigations on the structure to ensure a durable building. This can be performed with BIM (Vilutiene et al., 2019).
Parking investigation	Investigations on the demand for bike and car parking (Boverket, u.d.-a).
Waste investigation	Investigations on the amount of waste generated from the building (Boverket, u.d.).
Activity investigations	Investigations on the function of the building and how that will affect the surroundings (Boverket, u.d.-a).

These documents are used to acquire building permits and are used in cooperation with engineers and designers to create construction documents. Construction documents are the final documents that in DBB projects are used as procurement documents for the tendering process. These documents display technical solutions of client demands and needs together with how the production phase is to be performed (Boverket, u.d. -a).

In this phase the development of the buildings architectural and structural design together with important documents are performed. For DBB projects this phase is the basis for the tendering process and needs to be well executed to achieve the correct bids on the project (Byggfakta, u.d.-c). The tendering process will either be performed after the concept phase for DB project or in the end of the design phase for DBB projects.

3.6.2 Tendering process

The tendering process is the part where contractors are chosen to perform the contract. Here contractors submit bids for the contract which are either based on the concepts or the complete designs. The tendering process awards one contractor the right to perform the project and a contracting contract based on AB 04 or ABT 06 is signed between the two parts (Byggfakta, u.d. b). Depending on whether the client is a public actor or a private actor the tendering process is performed in different ways. For private actors the choice of contractor is free but usually the contractor with the best tender is chosen (Boverket, 2023 b). For public actors the contractor is chosen according to the law on public procurement. This is a procurement process regulated by law to make sure that the procurement is open for competition. The contractor can so forth not be chosen on relations but rather on lowest bid and best competence (Konkurrensverket, u.d.).

3.6.3 Production phase

The production phase is the construction of the design and follows the guidelines given in the signed contract, and tender documents. This process which is visualized in figure 7 includes all phases from production planning to the handover and all work that has been described in the contract will be performed, from groundwork to interior design and plumbing. For DBB executions the tendering process is also included in the production process whereas it is included in the planning and design process for DB executions (Kahrimanovic, 2020).

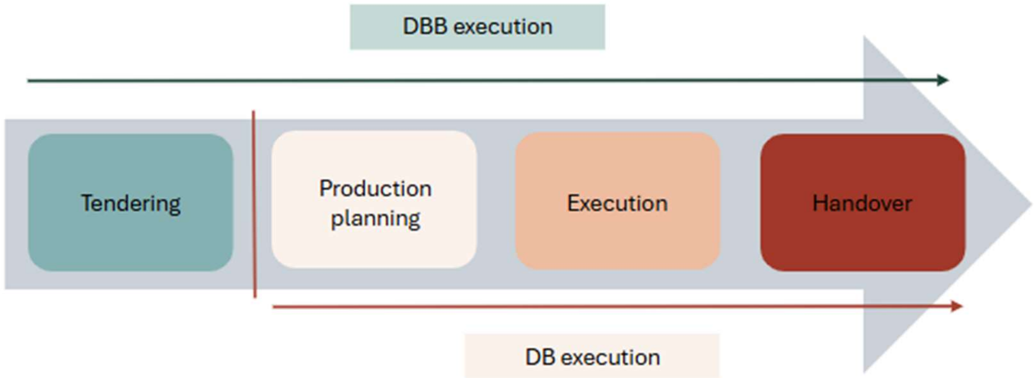

Figure 7: The different phases of the production process (Kahrimanovic, 2020).

In this process the contractor has the utmost responsibility and is obliged to make sure the building is completed within the time and cost frame of the project with sufficient quality (Kahrimanovic, 2020). To do so production planning is a key part of this process as this is where the contractor develops a comprehensive strategy for how to perform the project. This involves what workforce and equipment is needed together with which steps need to be taken. During this phase the contractor also develops a comprehensive schedule for when each step in the production should occur (Jenkins, 2022). Figure 8 gives an example of how a project schedule could look like in a office building construction.

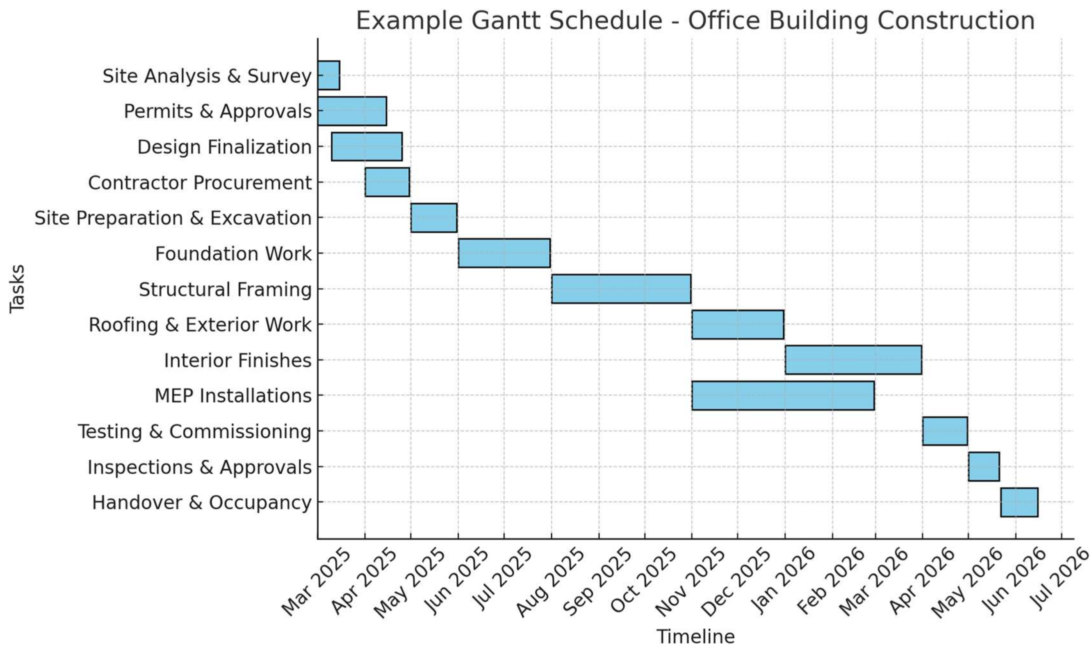

Figure 8: Office building project schedule example adapted from ChatGPT (2025).

The execution phase of the process is where the physical work is being performed, where excavations, foundation work, structural erections and installations are carried out (Project Vectors, 2024). This is often the longest process within the building process and the most dangerous part as faults that arise require changes which are hard to implement and expensive to perform (Guo, 2022).

The last part of the production process is the handover phase where a final inspection is performed to ensure all parts of the contract are withheld and the building can be approved and handed over to the client or owner for commissioning. All project handovers are similar and are the final part of the construction process (Paredes, 2024).

3.6.4 Completion

The completion contains a management process which includes the maintenance of the building during its lifetime. It involves scheduled maintenance work, rectification works in case of damages and renovations that occur until the building is set for demolition (Kahrimanovic, 2020). For this part the owner is responsible to address all faults appearing but have the right to oblige the contractor to perform the work if the faults appear during the liability time.

3.7 Construction in Gothenburg

The city of Gothenburg is undergoing continuous expansions, with over 400 active construction projects currently in progress (Byggfakta, u.d.-f). Several large-scale projects are being executed across the city with Västlänken and Karlatornet as particularly notable examples in the last years.

The city is situated on the west coast of Sweden along Göta älv and is characterized by a varied topography, including coastal zones, ridges, and fault valleys (Regionfakta, u.d.).

In addition Gothenburg presents distinct geological features that pose specific challenges to the construction industry, where a historic lack of knowledge regarding the regions soil properties and their interaction with groundwater has resulted in major consequences for infrastructure (Bergström et.al, 2022). The underlying geology primary concists of bedrock, where gneiss and granite are the most prevalent rock types (Det vilda Göteborg, u.d.). Above the bedrock a layer of granular soil is located followed by a thick layer of clay ranging from 40 to 100m in depth. Above the clay a fill layer is situated with depth between 1 and 7 meters. (Högsta & Sanell, 2016).

These geological conditions have considerable implications for construction activities. In particular, clay is considered a problematic soil type due to its tendency to undergo settlement under heavy loads. Settlement occurs when the water within the clay is pressed out due to the pressure affected by the building loads, leading to compression of the soil mass and a subsequent lowering of the ground surface. This can result in structural issues such as cracked walls, sloping floors, misaligned windows and doors, and malfunctioning drainage systems if not handled correctly (Nobel, u.d.).

4 Interview study

This chapter contains the outcomes from the nine interviews that were performed with field active clients, consultants, contractors and legal officers who all have experience working with AB 04 and ABT 06 contracts although in different extents.

4.1 Client interview results

The clients share the view that the standard agreements are valuable assets to the construction industry, but they also highlight various challenges and misconceptions in their practical applications. While they all recognize the importance of these contract forms in structuring contracting contract, their opinions diverge regarding knowledge about the contracts, and what contract form is the most effective.

Interviewee 2 thinks that the AB contracts are a fantastic system and likes that there is so much that is given in the templates. He sees that this makes it very easy to describe and produce contract documents that a contractor can calculate a price on. He also sees this as a huge security but still clarifies that there are always discussion points and questions about uncertainties. The interviewee mentioned that "in the case of extreme price increases that give a 20% index increase on some categories, then discussions arise about whether one is entitled to compensation even though a fixed-price contract has been procured."

In the same manner interviewees 3 and 5 recognize the standard agreements as good in principle but admits that modifications must be made to them. The interviewee sees that through the implementation of these agreement templates, the industry has gained a standard to lean on and that lives on a balanced distribution of risk, which means that many risks can be prepared for and considered.

When considering the knowledge within the sector, Interviewee 2 reckon that he has a good grasp of the various AB contracts and their importance but recognize that there are many on the client side who do not have that knowledge. Interviewee 4 agrees and confirms interviewee 2´s view as he admits that he does not have a super good grasp of exactly what the differences between AB 04 and ABT 06 are. Interviewee 4 feels that he has an eye on the overall principles but lacks detailed knowledge. He also believes that clients often have preconceived notions about the agreements, which can affect their choice of contract form.

Interviewee 3, however, thinks that the knowledge about the agreements is very good among those who need to be familiar. However he believes that the contracts are very easy to interpret as a template at this level must be rather broadly written. This implies that individual situations can be difficult to interpret, which forces legal solutions. In the same manner interviewee 4 and interviewee 6 also shed light on the fact that the standard agreements are a bit difficult and that this leads to problems regarding interpretations. However interviewee 6 did also mention that it wouldn't be possible to work without AB 04 and ABT 06 and that projects would run into the ditch several times a week without them.

Both interviewees 3 and 5 although see that the AB contracts are very easily accessible and that the opportunity to read about them is big. They do also mention that there is a lot of literature that explains them further.

Additionally, Interviewee 3 mentioned that AB 04 and ABT 06 are written for traditional DB and DBB executions. However, in some projects, especially in the construction industry, other forms of agreements are used where the client and contractor cooperate more closely, such as partnering agreements and collaboration agreements. These types of contracts do not work fully with AB 04 and ABT 06 but require many adaptations. In some cases, completely new agreements must be written from scratch. Interviewee 6 adds to Interviewee 3s mentions about how AB 04 and ABT 06 are written for traditional DB and DBB executions and acknowledges that ABTs often aren´t performed in the way they were firstly designed and intended to.

When the clients discuss which form of agreement they prefer, they all prefer an ABT 06 but say it is dependent on the project. Interviewee 2 points out that there are cultural differences between different cities in Sweden, and that if it is a large project, the interviewee claims that AB 04 contracts are very rarely carried out as they are resource-intensive for the client.

Interviewee 3 says that it depends on the conditions faced, but that the ABT 06 contract has more advantages in general. The interviewee also believes that the ABT 06 contract has the advantage that the contractor creates the construction documents and does the design. The interviewee mentions that this means that the design can be coordinated with the construction, which implies that the design can be carried out in a way that suits the contractor and their way of working. Interviewee 3 mentions how this differs from AB 04 contracts where the design takes place without regard to who is going to execute it. However, the interviewee mentions that there are certain situations when a ABT 06 contract is used, and an AB 04 contract is carried out.

Interviewee 6 thinks that an ABT is the better choice as there are always details that do not match reality which in case of an AB 04 contract creates a lot of questions and ÄTA for the client. The interviewee also mentions that contractors need super detailed construction documents, whereas if it is an ABT the contractor doesn't need to perform as detailed documents which save time and money.

Apart from these factors the clients recognized several other key factors related to choosing contracting form. Table 7 visualizes these factors and describes how they impact the choice of contract form.

Table 7: Factors impacting the choice of contracting form

Factor	Interviewee	Description	Impact on contract choice
Detail level	Interviewee 2	The level of detail needed in the facility that is procured.	"If the required detail level is high no contractor will be able to design, it in the same way as you as they do not have the same knowledge. For example, at Karlastaden they chose to

			carry out an AB 04 on an entire media company's facility in the basement as it was a huge media center, and they then wanted to have control over the design and that the requirement specification was difficult to set to buy up a ABT 06. "
Degree of freedom	Interviewee 3	How much freedom the client intends to leave the contractor.	"If the freedom is low, the contractor does not have the possibility to choose the execution. For example, when building a train platform, this needs to be connected to surrounding systems and there is not much for the contractor to say about it, and you usually buy an AB 04. The opposite is then with great freedom, if you are going to build a stretch of road on the countryside, you as a contractor can choose large parts, which means that an ABT 06 is the easiest. "
Cost of tendering	Interviewee 3	The cost of preparing and submitting bids, which affects competition.	Depending on the number of projects ongoing, contractors might have troubles submitting bids for ABT 06 as they are more expensive to procure which decreases competition. According to Interviewee 3 The preliminary design costs around 2% of the total project cost for ABT 06 in comparison to AB 04 designs that costs around 0,5%. In case of a 1 billion SEK project a ABT 06 design would cost 20 million and an AB 04 would cost 5 million. In case you get every 4th the cost will be 80 million compared to 20 million.
Cost of design phase	Interviewee 6	The cost of planning and designing the project execution.	According to Interviewee 6 the cost of design and planning ends up around 2-5% of the total cost for ABT 06 contracts and 8-10% for AB 04 contracts.
Time	Interviewee 3 and 6	The time pressure to execute the project.	In case of a tight schedule, according to Interviewee 3 AB 04 usually goes faster as the entire design is completed before tendering, which means that construction can start immediately. Interviewee 6 although points out that AB 04 designs often take significantly longer time. the interviewee also mentioned that a high level of accuracy

			is required and that there often are many details that do not align, leading to changes and delays.
Competence	Interviewee 2,	The level of in-house expertise in project design and procurement	In case of low in-house competence regarding tendering the client should go with an ABT 06.
Trust	Interviewee 4	The level of trust a client has in the contractor	If the client trusts the contractor and has a long experience of working together it is easier for the client to choose an ABT 06 and leave himself outside.
Divergence in solutions	Interviewee 6	Multiple different solutions for the project execution	If the client is keen on receiving multiple alternative solutions ABT can offer one alternative solution for every bid that comes in while AB offers one solution that is given by the consultants to the client or by the designers in-house.
Cost	Interviewee 6	The cost of the project	The client wants to get as much as possible for as little money as possible.

The clients also highlighted several challenges in the construction industry that relate to the choice of contracting form. Table 8 categorize these challenges based on the contract type AB 04 and table 9 of ABT 06. While each has its unique challenges, some challenges are common to both.

Table 8: Common challenges for AB 04

Challenge	Interviewee	Description	Impacts
Lacking procurement	Interviewee 2 and 3	Faults or shortcomings in the client's design or plan.	ÄTA
Low knowledge	Interviewee 2,	In case the client does not understand what, it takes to design, plan and run the building it becomes a great challenge.	Lacking procurement, ÄTA
Obstacles	Interviewee 3	Obstacles can be the war in Ukraine, extreme weather and archaeological finds.	The war has affected the availability of labour and material prices. Weather and archaeological finds cause delays in the construction projects which leads to extra costs.
Differences in reality	Interviewee 6	Circumstances can differ from theory to reality.	The construction cannot be performed as planned

			and ÄTA-works appear which is outside of the budget.

Table 9: Common challenges for ABT 06

Challenge	Interviewee	Description	Impact
Cooperation	Interviewee 2	Client and contractor needs to work together. There often arise conflicts between the client and the contractor	The client thinks that the contractor has carried out the work in an incorrect way, but that in the end there is always a two-sided street where the client must realize that the clarity of the regulations must be clear enough that the contractor cannot interpret them in a different way.
Obstacles	Interviewee 3	Obstacles can be the war in Ukraine, extreme weather and archaeological finds.	The war has affected the availability of labour and material prices. Weather and archaeological finds cause delays in the construction projects which leads to extra costs.
Contractor performing incorrect tasks	Interviewee 6	Contractors follows the drawings without analyzing if the drawing was correct.	Change orders and rectification work.
Description of quality	Interviewee 3	It is hard to describe a quality in words.	Clients often refer to a certain material and therefore locks the contractor to that material.
Incorrect designs	Interviewee 2	In case of steering's, the contractor assumes the prescribed detail will work.	In case the prescribed detail does not work ÄTA-work will be required.
Freedom	Interviewee 6	Clients often come with demands and steering's and thereby minimizes the contractor's freedom.	Contractors are not allowed to design

Economic, qualitative and social effects are often outcomes of the challenges in table 8 and 9 and the clients pointed out several effects that come up during the construction.

Interviewee 2 sees no difference in quality regardless of whether you chose an AB 04 or ABT 06 contract. He mentioned that you get what you buy and points out that it is crucial for the client to demand exactly what they want no matter if it is an AB 04 or an ABT 06. Looking into social effects interviewee 2 mentioned how there often occur more ÄTA-work in an AB 04 as the contractor is forced to report every single screw or pipe placement that is wrong. He also mentioned how in many cases ABT 06 is the most cost-effective option as contractors are highly skilled in their specific areas and are often better suited to rely on their own system designs than relying on pre-prepared designs. The interviewee although pointed out that consultant can be competent but that an ABT 06 contract allows the contractor to optimize the systems more efficiently. However, Interviewee 2 once again stresses the importance of clearly defining requirements as contractors perform the cheapest alternative which can impact on the quality if not regulated properly.

Interviewee 3 mentions that the economic effects largely depend on choosing the right contract for the right project and that if done correctly, ABT 06 should results in a lower final cost. He attributes this to the advantages of ABT 06 contracts, where the contractor can tailor the design to the construction process. He also highlights how the quality of the building is influenced by the contractor's design.

Interviewee 3 argues that if the contractor conducts proper planning, the quality does not differ between AB 04 and ABT 06. However, he points out that flaws in the client's design under AB 04 can create issues in production that cannot be fixed. At the same time, he warns that a weak specification in an ABT 06 contracts can lead to lower quality, as the contractor may go for the cheapest possible solutions.

Interviewee 6 believes ABT 06 would be the cheaper option, as it allows for multiple solutions in bidding, often resulting in significant price differences. He notes that this can be an advantage compared to AB 04, where a consultant produces a single design that may be costly. He implies that this is because consultants tend to design with a highly cautious approach, while contractors can find alternative, more cost-effective solutions that still generate profit. He also discusses the social aspects of collaboration with the contractor, emphasizing that regardless of the contract type, a well-functioning partnership generally leads to a successful project outcome.

4.2 Contractor interview results

Both contractors thought of the standard agreements as good but interviewee 7 pointed out that they are quite outdated and saw the necessity of the new updates arriving in 2025. The interviewee emphasized that these are the rule sets that we got and that you should adapt the parts that are outdated in every single project. Interviewee 8 mentioned that he has become aquatinted with the standards and that it is a relief that they exist as it is something to fall back on and emphasizes that he doesn't see how we would do in case they didn't exist.

Apart from this interviewee 7 doesn't find the agreements easy, but not super advanced either, while interviewee 8 sees them as quite clear. The contractors also notes that some parts are interpretable and interviewee 7 mentions how it is like all law text, "One can read something, and then after thinking once or twice more, it can turn out to mean something completely different depending on how you interpret it". He mentioned an example where AB 04 and ABT 06 says that "the person who assigns a task is responsible for it" and mentioned the risk for interpretation in "What is an assigned task?".

Interviewee 7 also recognized that ABT 06 contracts often are quite steered and that the worst projects he has been a part of has been those where the client has almost completed the entire design and although bought an ABT 06 execution.

Considering whether the contractors prefer to work with AB 04 or ABT 06 interviewee 7 mentioned how if it would have been five or ten years ago, he would have undoubtedly said ABT 06. He mentions how this is because ABT 06 offers greater flexibility and opportunities to influence projects. He still holds that view, but also acknowledges that AB 04 can have its advantages depending on the nature of the project. He mentiones how in cases where the client is a large and knowledgeable organization, and the product is highly specific, AB 04 can be a good solution, provided the client knows exactly what they want. However, he sees little value in using AB 04 for projects like warehouses or office buildings. In such cases, he believes it is more important for the client to focus on clear requirements. The interviewee although mentioned that in case you build more complex, you can start to consider an AB 04. He also mentioned that the less experienced you are within construction the bigger reason you have to choose an ABT 06 and points out that the giants who have a big knowledge and very specific projects absolutely can go with an AB 04. Interviewee 7 also points out that he believes that the best product arises when you engage with a contractor in the early stages and goes with an ABT 06.

Interviewee 8 does also prefer ABT 06 projects over AB 04 projects as it gives the contractor a higher level of freedom and more possibilities. He although mentioned how AB 04 and ABT 06 as text are quite similar to each other and that he prefers working in ABT 06.

The contractors also mentioned that taking responsibility over what is included in the documents is a big challenge for both AB 04 and ABT 06. Some people think you get exactly everything when you buy an AB 04, but the contractors describe how it depends on the design and what is written in the documents. Something that is not included in the design documents will not be included in the construction. They mention how this challenge often impacts on economic, qualitative and social sides of the construction.

They do also mention how ABT 06 has economic benefits towards AB 04 as the contractor is allowed to design in synergy with the construction, work broader with suppliers and work with several solutions. Interviewee 8 did although mentioned how the tendering process is more expensive for the contractor in an ABT 06 than an AB 04 as contractor needs to do more. This does although not impact the client.

Interviewee 7 pointed out that the responsibility challenge is lower in an ABT 06 as you get the whole picture, and the contractor takes overall responsibility so that no things are missed out. Interviewee 8 although mentions how this only works if the client leaves freedom for the contractor to design. He mentions how in case the client has controlled something that responsibility shifts to the client as the contractor should assume that the design works. This is something that Interviewee 8 mentions can lead to disputes as some clients tend to think you are relieved of responsibility when you buy an ABT 06.

Interviewee 7 also mentioned that the contractor can design within the economical boundaries if the contract is performed with an ABT 06 contract and interviewee 8 recognized that consultants often tend to design more expensive. He mentioned how he believes consultants don't really know about production engineering or economy but rather thinks more technical and doesn't want to take any risks so they draw a more expensive product. He also explained that clients tend to think that you can get more competition in a AB 04 tendering process and so forth get a lower price but emphasized that it might be a low price but on an expensive product. Interviewee 7 also, apart from this mentioned how the contractor knows what drawings are required and so forth doesn't complete as many drawings as in an AB 04 which lowers the price.

In a qualitative manner interviewee 7 mentions that there shouldn't be any difference between an ABT 06 and an AB 04. Both the contractors mentioned how many clients think that if we choose ABT 06 we get the absolute cheapest and are afraid to get something they do not want. Interviewee 7 demises this opinion as it depends on the demands the client put in and that there is still a warranty period. He also mentioned that the contractors want to keep the client for future projects and so the absolute cheap is seldom the best solution.

Interviewee 7 also mentioned how there isn't such a big social difference between the contracts but rather in how you contract different contractors. In ABT 06 you buy a bigger package deal while in an AB 04 you own a bigger part of the execution and can impact it more. He although point out that ÄTA work are more occurring in AB 04 contracts and that this might impact the relationship with the client. Interviewee 8 also mentioned that there are more questions that exist in a borderland in AB 04 than in ABT 06 which creates discussions. Interviewee 7 draws a connection to economical parts as well where the contractor can earn tremendous amounts of money if driving ÄTA works to its peak and utilizing every flaw in a design.

4.3 Consultant interview results

The consultants see that the basic idea of the AB contracts are great for the industry and interviewee 1 mentions that this is because they give both parties something to relate to in a simple way but alarms that ABT has a distorted view of itself. He believes that clients often think that everything will be solved if you buy an ABT and stresses out the need for the client to really have knowledge of what they want when they buy an ABT 06. Interviewee 1 does although see the AB contracts as great foundations, but they need to be adapted to the projects. Both consultants, although emphasize the risk that errors might occur when you change the templates and interviewee 9 points out that there arises a lot of problems when you deviate from the standards.

Interviewee 1 thinks that a ABT 06 contract is very advantageous, if and only if the client can present the operation that should function properly. He clearly emphasizes that it is important that the client can clarify what the facility will be used for and what requirements exist, but also that it depends on the project. He although point out that he would have advocated an AB 04 in addition to an ABT 06 every day of the week if you have the opportunity to design it. Interviewee 9 on the other hand doesn't see why ABT 06 is as popular as it is and describes that in ABT 06 it's hard to know exactly what you get a price on during the bidding process. He does although see a possibility for ABT 06 in case you perform it together with a known contractor rather than choosing through a tendering process.

Interviewee 1 did also mentioned that the most important thing is that you as a client realize that no matter what type you choose, that you must have staff or representatives who are active in the contract so that you don't just hand over all the responsibility to the contractor and come back when it's done, but that you actively follow the process, which makes it harder for the contractor to get away with things.

The consultants also highlighted several challenges associated with both AB 04 and ABT 06 contracts. They described challenges that are common to both contract forms, as well as issues specific to either AB 04 or ABT 06, as presented in Tables 10 and 11 respectively.

Table 10: Common challenges in AB 04

Challenge	Interviewee	Description	Impacts
Lacking procurement	Interviewee 1 and 9	Faults or shortcomings in the client's design or plan. When something doesn't align in relation to original documents.	ÄTA
Agile	Interviewee 1	The industry is too agile, and we do not spend enough time on the design as the industry believes that the cost is too large even though it is only a few percent of the entire contract.	Lacking Procurement

Table 11: Common challenges in ABT 06

Challenge	Interviewee	Description	Impact
Controll	Interviewee 1	It is difficult to control what you get, especially if you are not the one who uses the facility.	Low quality
Agile	Interviewee 1	The industry is too agile, and we do not spend enough time on the design	Lacking Procurement

		as the industry believes that the cost is too large even though it is only a few percent of the entire contract.	
Lacking Procurement	Interviewee 9	When something doesn't align in relation to original documents.	ÄTA
Interpretations of the contract	Interviewee 9	Different interpretations between the client and contractor what is supposed to be included in the contract	Conflicts and ÄTA

Interviewee 9 also mentioned that the initial price of an ABT 06 can look quite good but alarms that there are discussions in both design phase and in the execution which can increase the price. He believes that ABT 06 contracts are an endless search for ÄTA from the contractor side which impacts the price. He also sees that in an AB 04 contract if you have performed solid designs and documentations there should not become any ÄTA-works. Interviewee 1 also highlights that if you have made a very solid design there shouldn't become much ÄTA in an AB 04 but points out that there usually becomes a lot of ÄTA-work as the contractor isn't responsible for the documents.

Interviewee 1 mentioned that the economical part is less affected of what contract type you choose but rather how you cooperate with the contractor. He emphasizes that in an ABT 06 it might become cheap with their design, but it might not be what you want so it will be costly anyways. He also mentioned how for AB 04 it can become very expensive if you haven't performed your designs and documents in a good way and there arise a lot of ÄTA-works.

Both the consultants also mention that it is very hard to control what you get in an ABT 06 as in an ABT 06 contract it's very hard to get qualitative demands into the documents which makes it easy for a contractor to take shortcuts as they in an ABT are supposed to perform the cheapest alternative that the contract prescribes. Interviewee 1 did in addition to this emphasize the need for the client to be active in the process to reduce the risk of shortcutting.

"There can be a big difference between a plastic floor and a plastic floor" – Interviewee 1

In a social manner Interviewee 1 mention that there often arise more discussions in AB 04 while Interviewee 9 sees that there should be more discussions in ABT 06 than in an AB 04. Interviewee 9 mentions that this is connected to what is involved in the contract, and what is not and mentions how it depends on what payment solution is chosen for the contract.

4.4 Legal officer interview results

The legal officer recognizes that there is a lack of knowledge among both clients and contractors, pointing out that this is an outcome from that clients often hire consultants to prepare contract documents but lack the internal expertise to assess their quality. She also mentions how on the contractor side, training is a major challenge and points how large firms, no longer have many in-house workers and instead rely on subcontractors.

While interviewee 5 recognizes the lack of knowledge, she also sees that the standard contracts need to be altered depending on the project and emphasize that the contracts are not always suitable for practical use. She mentioned how they need to be applicable to both small and large projects, which makes them hard to implement for practitioners and so forth doesn't always reflect how the industry works. Interviewee 5 does also point out how ABT 06 isn't performed in the way it was originally intended as a function-based contract but rather include extensive documentation and technical specifications which limit the contractor's flexibility. As a result of this, interviewee 5 mentioned that the functional responsibility does not always shift to the contractor as intended by the agreements.

Interviewee 5 didn't specify any certain challenges for each contract form but rather pointed out challenges that effect both contracting forms. She argues that clients are often dissatisfied with the quality of construction projects, regardless of the contract type. She mentioned how the issues frequently stem from poor execution, construction defects, and generally low quality and how the new standard contracts will give clients greater opportunities to influence quality, but challenges still remain.

The interviewee also mentions how it for contractors is difficult to create profitable businesses since construction projects are complex and competition is high. She points out that the industry often faces financial pressure, requiring contractors to find efficient solutions to stay competitive. Permit-related issues are another challenge that can delay projects and create uncertainty according to her.

Furthermore, she discussed how disputes arise regardless of the contract type, and that there is no clear indication of whether AB 04 or ABT 06 leads to more disputes, as conflicts can occur in both contract forms. Interviewee 5 also mentioned that flaws in the design and low knowledge about the agreements are the most common reasons for disputes regarding ÄTA-works. She acknowledges that disputes regarding ÄTA-work often stem from ambiguities regarding what is included in the contract. In practice, multiple documents and stakeholders may be involved, making it difficult to determine where the error originated and who is responsible. Contractors are often influenced by several consultants, which can blur the lines of accountability. She mentioned how a key issue in these disputes is whether the contractor could have reasonably anticipated and controlled the conditions that changed during the project.

4.5 Perspectives on office building constructions

When choosing contract form for an office building construction in Gothenburg the interviewees have different opinions regarding what contract form should be used. Interviewee 3 claims that an ABT 06 is the obvious choice but that it still depends on the situation. He stated that if it is to be built in Gothenburg, in the city, this may be done with a shared contract for the foundation and the office building. This is due to the complex soil situation in Gothenburg, where you may have to control the outcome of the foundation. He implied that you can then choose a shared contract for the project or make a construction contract in the ABT 06 contract for the foundation as the rest of the execution is relatively simple.

Interviewee 2 also claimed that he would go with an ABT 06 contract as there are a lot of people involved, and that the client or landlord doesn't have the resources to perform an AB 04. He emphasizes that you have got to believe that the sector has sufficient experience, knows Gothenburg, knows about detail plans, building permits and the functions in the infrastructure to complete the project.

Interviewee 6 recognizes that he hasn't worked to much with new buildings but highlights that he probably would go with an ABT 06. Interviewee 4 mentioned that he would also have gone with an ABT 06 as in the Gothenburg area there are quite a few parties involved and as a developer in the city and landowner, he doesn't believe that a client would have had the resources to manage an AB 04 contract. He mentioned how he would assume that the market is experienced enough and that the City of Gothenburg could guide him through the process. Interviewee 4 also points out that the design would be influenced by the detailed development plan, building permit regulations, architects, and various stakeholder preferences and that it also needs to align with existing infrastructure and functionality requirements. Given these complexities, he said he would choose an ABT 06 contract without hesitation.

Interviewee 9 on the other hand mentioned how for an office building he would suggest an AB 04, so that you get more exactly what you want. Interviewee 1 doesn't explicitly mention a choice regarding office buildings but emphasized that if you have the possibility to design and plan an AB 04 he would go for that every day of the week.

Both contractors mentioned that they probably would have gone with an ABT 06, and interviewee 7 mentioned that there is no need for clients to draw details, while interviewee 8 recognized that clients can describe office buildings with functions. He also emphasized that it is quite easy for contractors to take responsibility to create a complete building from demands according to ABT 06 for an office building in opposition to a hospital that often involve high complexities.

5 Discussion

In this chapter, a thematic analysis of the interview results in Chapter 4 and the theoretical framework in Chapter 3 will be performed to identify connections between the interviews and the literature. This will be performed through interpretations of the quotes given by the interviewees with discussions regarding connections to the theoretical framework and the other way around. This will be presented in accordance with recurring themes that arose during the interviews and will build upon codes that were created from the interview results to answer the research questions presented in Chapter 1.2.

5.1 Knowledge, interpretation & attitudes

The theme knowledge, interpretations & attitudes emerged in several of the interviews, highlighting how the interviewees perceived the AB contracts. Many of the interviewees highlighted the contracts as good and valuable for the construction sector, describing them as a "*Huge security*" and *"Something to fall back on"*, emphasizing their important role. The contracts were, although viewed as *"the rule sets that we got", "that they aren't always suitable for practical use"* and are *"quite outdated"*. This gives the indication of that the new updated versions arriving during 2025 are welcomed.

Several of the interviewees did also express a concern for the knowledge regarding the AB contracts within the sector, many of which pointing a finger towards another role in the sector.

"*Lack of knowledge among both clients and contractors" – Interviewee 3*

"There are many on the client side who doesn't have the knowledge" – Interviewee 2

Some of the interviewees recognize their own limits, especially among the clients, which justifies the interviewee's perceptions. These clients realize that they might not always have the knowledge required, which is understandable as they according to the legal officer often hire consultants to prepare contract documents minimizing their training and understanding. This is further noticeable and understandable as most of the clients and contractors argue that the AB contracts are difficult to read, much like legal texts in general, which opens room for interpretations, and so forth, also preconceived notions. This displays a necessity for supportive literature that clarifies and helps explain the AB contracts.

"One can read something, and then after thinking once or twice more, it can turn out to mean something completely different depending on how you interpret it" – Interviewee 7.

This is further supported as one of the clients mention that *"a template at this level must be rather broadly written"* and the legal officer mention that *"they need to be applicable to both small and large projects"* which implies that there is no easy way to conduct contract templates that fit all project types and isn't interpretable. This does although bring discussion and problems to the sector as clients may choose the wrong contracting form for the wrong type of project, or work with the contract form in a way that it isn't designed for.

The ABT 06 is originally a form of Design-build execution where the contractor takes full responsibility for both design and construction (Janssens, 1991). Several of the interviewees although mentioned how ABT 06 often is performed in a way that it was not intended to from the beginning and *"has a distorted view of itself"*. They describe how it is no longer performed in line with the design build execution and that this is because clients are not aware of how the ABT 06 contract is supposed to work.

"ABT isnt performed as a function-based contract but rather includes extensive documentation and technical specifications" – Interviewee 4

It's also mentioned by one of the consultants how clients often think that everything will be solved if they buy an ABT 06 contract, and that they will get the absolute cheapest construction if they do, by the contractors. They mention how clients don't seem to realize how it depends on the details in their design documents.

5.2 Risk, responsibility & control

The design documents are a key in construction and during the interviews it became clear that this isn't obvious. Several of the interviewees mentioned how the details in the design documents decide what you get no matter if it is an AB 04 or ABT 06 contract. It was mentioned how *"you get what you buy"* and that it is important that the client is responsible for their design documents. This is evident in both AB 04 contracts and ABT 06 contracts as both the interviewees of this study, aswell as Rådberg (2011) and Hedberg (2013) mentioned how it's important for the client to be very detailed and correct in their design documents. This is because flaws can create issues in AB 04 productions and weak specification can cause lower quality in ABT 06 as Hedberg (2013) described that requirements that are not specified may not be met.

Being more accurate does although not necessarily mean designing more, especially when it comes to ABT 06 contracts. Interviewee 7 mentioned how the worst projects he has been a part of are those where the client has almost completed the design and gone with an ABT 06. This becomes a problem as the contractors, legal officer and some of the clients describe how it minimizes the contractor's role and because the AB contracts are designed with a balanced risk between the stakeholders.

"Lives on a balanced distribution of risk" -Interviewee 3

The ABT 06 is originally intended to be function-based contract (Byggandets Kontraktskommitte, 2018) and interviewee 8 mention that by designing specific details this modifies the role of ABT 06 and so forth changes the risk distribution.

"in case the client has controlled something that responsibility shifts to the client as the contractor should assume that the design works" – Interviewee 8

It is something that creates a lot of discussions as the client tend to believe that the contractor still has the responsibility because it is an ABT 06.

Altering the contracts original intention also applies to the templates themselves. Ryning & Svensson (2024) describe that the AB contracts are agreement forms and that each part is free to make additions or reductions from the contract in their agreements. Several of the interviewees pointed out that this is a must, and that they need to be adapted to fit the nature of the project they are intended for. The consultants although raised concerns regarding that when you make changes to the templates there arises a lot of risks and something might become wrong. The literature ads to this discussion as Rådberg (2011) mentioned how making alterations to the contracts pushes the risk in one direction and that by doing so cost losses occur which need to be regulated in other projects. This does according to Rådberg (2011) create a vicious circle which further justifies the consultants alarm regarding risks with alterations.

"There arise a lot of problems when you deviate from the standards" – Interviewee 9

Loss of control is something that is mentioned by Kubba (2010) as a disadvantage to ABT 06 and some of the interviewees also mention that it is hard to control what you get in an ABT 06 especially if you deliver functions. Interviewee 3 and the consultants mentioned how the quality might suffer as it is hard to describe qualitative demands in ABT 06 without designing.

"There can be a big difference between a plastic floor and a plastic floor" -Interviewee 1

Therefore, it was described as important to know when to stop designing. By designing more than necessary in an ABT 06 it diminishes the contractor freedom and its possibility to design in cooperation with the craftsmen.

5.3 Relationships & collaboration

Several of the interviewees highlighted the importance of cooperation during a project between all stakeholders. It was mentioned that *"regardless of the contract type, a well-functioning partnership generally leads to a successful project outcome"*. This implies that the cooperation is essential in AB 04 and ABT 06. Interviewee 1 also mentioned that the cooperation affects the economical part and highlighted that the cooperation is a bigger factor to differences in economical outcomes than what form of contract you choose.

"The economical part is less affected of what contract type you choose but rather how you cooperate with the contractor"- Interviewee 1

This gives a reason to believe that no matter what contracting form is chosen, a good cooperation between the stakeholders can successfully deliver a project with good outcomes. Although this might be the case, interviewee 7 mentioned that ABT 06 has a perk in a collaborative manner as contractors get a bigger freedom to design the project in synergies with the craftsmen, can work with multiple solutions to a problem, and can broaden the work with suppliers. This can give more efficient executions as the construction is designed for the craftsmen's expertise, better and cheaper solutions as well as equivalent materials to lower costs.

The contractors and one of the consultants also highlighted that the ABT 06 contract is best performed when the client and contractor cooperate in creating the design and documents and is contracted without the bidding process. This is further built upon by interviewee 7 explaining how the way you contract different contractors affect the social settings in the project rather than what type of contract is chosen.

"There isn't such a big difference socially between the contracts but rather in how you contract different contractors" – Interviewee 7

This implies that the contract form might be of lower value in social terms, and this might explain why there are oppositions between the different roles opinions regarding what form of contracting most affects the social situations in a project. While several of the clients and contractors see that discussions are more occurring in AB 04 contracts one of the consultants mentioned how ABT 06 contracts brings discussions in both the design phase and the execution phase.

The interviewees also highlight that discussions and disputes often arise in relation to ÄTA-works, and as with what contracting form affects the social settings the most, there are differences between the interviewees' opinions regarding which form results in more ÄTA-work. While most clients and contractors recall more ÄTA-work in AB 04 contracts, one of the consultants noticed more in ABT 06 contracts.

5.4 Economic & resource considerations

ÄTA-work, which involves all changes, additions and deductions to the contracted scope (Sager, 2014) is described by Interviewee 7 and 9 as a cost-driving process and something that can impact the economy of a project. Nyman & Johnsson (2019) recognize poor competence, deficient tender documents and incomplete designs as the prime reasons for ÄTA-work. Interviewee 6 further addressed that differences between reality and design is another factor to the occurrence of ÄTA-work together with flaws in the design as explained by the legal officer.

Eidem (2022) recognize that the reasons for ÄTA-work often arise due to limitations in time and budget during the tender, and procurement phases which is explained interviewee 1 that mentioned that the sector has become too agile and doesn't pay enough attention to the design and planning phase as the industry believes that the cost is too large even though it is only a few percent of the entire contract. This gives an indication of why the other interviewees mentioned that a lacking procurement is one of the biggest challenges as it occurs so often.

That the industry is too agile and spends short amount of time in the planning process creates bigger room for mistakes in the design documents, which may lead to ÄTA-works or a lack of quality. And while interviewee 1 explained that even though it is only a few percent of the total cost of the project, a lacking design can lead to way bigger expenses than what the total cost of the design would have been if performed thoroughly. Interviewee 6 explained how the cost for an AB 04 design might be around 2-5% for an ABT 06 contract and 8-10% for an AB 04 contract.

Interviewee 7 mentioned how in AB 04 contracts the contractor can earn tremendous amounts of money if driving ÄTA-works to its peak, while interviewee 1 stated that these types of contracts can become very expensive if the client hasn't performed good designs, and a lot of ÄTA-work arises. Interviewee 9 although mentioned how if the client has performed a very solid design, there should not be any ÄTA-works in AB 04 contracts.

In contrast, ABT 06 contracts are described by most of the interviewees as less ÄTA-driving as the contractor can optimize the work of the craftsmen and is responsible for the design. Park and Hoon Kwak (2017) did also mention that DB contracts allow change upon design errors without formal change-orders. However, one of the consultants mentioned ABT 06 contracts as an *"endless search"* for ÄTA opportunities from the contractor side which presents an economic risk.

From a cost perspective, ABT 06 was often seen as the cheaper option by the interviewees. One of the clients argued that ABT 06 opens the option for several design options which can lower the cost, while AB 04 are limited to one design option. A contractor followed up by mentioning how the one option designed in an AB 04 by a consultant might be very expensive as the consultants want to secure a high quality rather than optimizing for a low price to a sufficient quality. On the other hand, an ABT 06 is mentioned to might become very cheap but might lack the quality that's desired by the client if its is not clearly regulated in the design documents.

It was also mentioned how the price of an ABT 06 can be lower as the contractor knows what drawings are required and so forth completes less drawings than in an AB 04. Several of the clients also explained how big projects can be hard to cope with for clients as they often become very resource intensive in AB 04 contracts.

5.5 Execution challenges & contract characteristics

As ÄTA-work can affect the economical results of a project these are a big challenge that contracts face during a project. The interviewees also mentioned several other challenges that affect the execution of the project in both AB 04 and ABT 06 contracts.

The consultants and two of the clients mentioned lacking procurements as one of the most crucial challenges that both AB 04 and ABT 06 contracts face. This includes Faults or shortcomings and differences to reality. Faults and shortcomings in the design can lead to several consequences that can draw the project over budget. In an AB 04 this can lead to ÄTA-works or projects that lack the quality you seek. This is often the case when the client doesn't understand what it takes to design, plan and run the building. In an ABT 06, shortcomings will more likely lead to a lower quality than expected. The interviewees' mentioned how for an ABT 06 it is common with faults or shortcomings as a quality can be hard to describe in words and this can make it easy for the contractor to take shortcuts to gain economic advantages. AB 04 and ABT 06 although mandates the contractor to carry out the work in a professional manner (Byggandets Kontraktskommitte, 2018) which implies that a certain standard should be upheld.

"Easy for a contractor to take shortcuts as they in an ABT are supposed to perform the cheapest alternative that the contract prescribes"-Interviewee 9

Another big challenge that was previously discussed in chapter *5.2 risk, responsibility and control* was that the clients often steer ABT 06 contracts. This is mentioned as a challenge as it diminishes the contractor's freedom which takes a way the possibility to work with contractor´s competences. The interviewees mentioned that the contractor has several competences and that if worked with correctly can help keep the project within budget. It was mentioned that if allowed to design and construct the contractor gets more synergies and can design in relation with the craftsmen and so forth tailor the design to the construction process. While if not, and the project is steered, this can make it harder for contractors to keep the project within the economical boundaries, especially if the clients design doesn't work.

"The contractor assumes the prescribed detail will work" – Interviewee 2

As interviewee 2 mentioned, the contractor will assume the design provided by the contractor will work, and if it doesn't this becomes an ÄTA-work which is a challenge for the project. Another interviewee described how the client's needs to take responsibility for what is included in their documents as a challenge as some clients seem to think that you lose responsibility when you procure on an ABT 06 contract. This was explained as that if the client steers the construction, it is the client's responsibility that it works. This builds upon the challenge regarding clients steering the project to a large extent, as it pushes the responsibilities from the contractor to the client and makes it look more like an AB 04 than an ABT 06 contract.

One of the clients also mentioned how obstacles are a big challenge for a construction project. This is although neither something that is affected by what type of contract form you chose. Obstacles like War, Pandemics and extreme weather were mentioned by the interviewee and all of these would affect AB 04 contract in the same manner as an ABT 06 contract. The literature does although mention how obstacles like these can give the contractor a longer time period to complete the project (Byggandets Kontraktskommitte, 2018). This minimises the risk for the contractor but heightens the risk for the client as a longer execution includes bigger costs for the client.

5.6 Decision factors & project realities

Challenges are a big part of the construction industry, and a construction project will always face challenges, the interviewees did although mention how the choice of contracting form depends on the project type and nature, which implies that choosing an appropriate contracting form for the project you want to design can reduce the challenges that you face.

Table 12: decision factors for choosing contracting form

Factor	Description
Detail level	The level of detail needed in facility that is procured.
Degree of freedom	How much freedom the client intends to leave the contractor.

Cost of tendering	The cost of preparing and submitting bids, which affects competition.
Cost of design phase	The cost of planning and designing the project execution.
Time	The time pressure to execute the project.
Competence	The level of in-house expertise in project design and procurement
Trust	The level of trust a client has in the contractor
Divergence in solutions	Multiple different solutions for the project execution
Cost	The cost of the project

In table 12, the factors that the clients take into consideration when choosing a contracting form are displayed. The level of detail needed in the construction is one of the key factors when choosing contract form according to the clients. It was mentioned how constructions with high detail levels are a better fit for AB 04 executions while ABT 06 is a better fit for projects with low detail levels. It was mentioned how high-level detailing requires knowledge about the details and how the contractor often doesn't have as good knowledge about these details as the client ordering it does. It was also mentioned how it can be difficult to set up detail demands without designing.

Designing details minimizes the contractor's freedom, which was another of the factors that the clients mentioned for choosing the contracting form. The clients mentioned how if you intend to leave a lot of freedom for the contractor to design an ABT 06 is a good choice while if you intend to design details an AB 04 is the better option. It was explained that by minimizing the contractor's freedom you take away the perks of ABT 06 of letting the contractor design in cooperation with the execution.

The clients also mentioned that cost is a big factor when choosing contract form and it was mentioned that it can be both in terms of the total project cost, cost of the design phase, and the cost of tendering. While cost of tendering affects the contractors more than the client in terms of economics, one of the interviewees mentioned that, in case of high volume of projects, the client should think about procuring an AB 04 instead of an ABT 06. It was mentioned how the cost of tendering ends up around 2% of the total cost for ABT 06 and 0,5% for AB 04, which can be a significant difference depending on the size of the project. If there is a big pressure on the sector and a lot of projects are being executed, the interviewee mentioned how it can be hard for contractors to afford to prepare a bid for ABT 06 projects. This might decrease the number of bids, and the competition will decrease, which can result in higher costs for a project with lower quality.

The cost of the design phase, on the other hand, directly impacts the client, as interviewee 6 described how the cost for design ends up around 2-5% of the total cost in an ABT 06 and around 8-10% for AB 04 contracts. This implies that an ABT 06 is cheaper to design for the client which gives an incentive to choose an ABT 06. The ABT 06 design is although included in the contractor's bid which implies that the client does not pay specifically for the design phase but rather for the total performance of the project. But as discussed in chapter *5.4 Economic & resource considerations* the contractor can design in sync with the production and only produces the drawings that are necessary and so forth can lower the total cost.

Cost of the design phase is included in the total cost for the project, although while in AB 04 it ends up outside of the bid and in ABT 06 inside of the bid. One of the interviewees mentioned how the client wants to get as much as possible for as little money as possible. As discussed in chapter *5.4 Economic & Resource considerations* ABT 06 is seen as the cheaper option due to the common occurrence of ÄTA-work in AB 04. Park & Hoon Kwak (2017) emphasized how DB contracts allow change upon design errors without formal change orders. This strengthens the interviewees thoughts that DBB projects generate more ÄTA-work and often is a more expensive choice.

Time is yet another factor that is mentioned by the clients as a factor in deciding on a contract form. One of the interviewees mentioned that AB 04 usually goes faster than ABT 06 projects as the production can start immediately. The Foraker group (u.d.) although mention how this extends the overall project schedule as construction cannot begin until the design phase is finished. Another one of the interviewees mentioned that AB 04 contracts often take significantly longer time as there often are many details that do not align which led to changes and delays. The literature strengthens this opinion as the Foraker group (u.d.) emphasize that if the design is not fully developed before being issued for bidding, changes may be required leading to change orders.

Time and costs are both tangible factors that can be analyzed from numbers, but the interviewees also mentioned non-tangible factors such as trust and competence as key factors when choosing contract form. One of the interviewees mentioned how the level of trust a client has in the contractor affects whether an AB 04 or ABT 06 contract is chosen. The interviewee explained that if the client trusts the contractor and has worked with them before it is easier to choose an ABT 06. This can be explained by that in an ABT 06 the contractor takes responsibility for the design and execution (Janssens, 1991). This does according to Kubba (2010), create a loss of control over the project for the client which creates an understanding of why trust is an important factor.

Competence is described by one of the interviewees as the level of in-house expertise regarding design and procurement. The interviewee described how incase you have low inhouse expertise you should go with an ABT 06 as the need for competence is lower as the contractor takes responsibility. Some of the interviewees did although mention that incase you have competence you can go with an AB 04.

While the previously mentioned factors are general for when deciding upon what contract type to choose this thesis aimed to discover what contracting type gives the client the best value for their money, creates the best working environment and delivers the best product when planning an office building in Gothenburg. The interviewees mentioned that office buildings are quite simple buildings in comparison to hospitals or laboratories. Those kinds of buildings are more complex and often have more explicit demands.

Several of the interviewees did so forth suggest that an ABT 06 contract would have been the best fit for an office building in general as it is a quite simple execution that often doesn't include high level details. The consultants did although praise an AB 04 for the execution of an office building if you have the possibility to design it.

"Would choose an ABT 06 contract without hesitation" – Interviewee 4

“ABT 06 is the obvious choice”- Interviewee 3

It was although mentioned that Gothenburg as a city has a complex geological environment with a complex soil situation which increases the complexity of the project. Det vilda Göteborg (u.d) further emphasizes that the geological conditions in Gothenburg include clay and Nobel (u.d) mentioned how clay has a tendency to undergo settlements which can result in cracked walls, sloping floors, misaligned windows and doors, and malfunctioning drainage systems if not handled correctly. One of the interviewees therefore proposed that a shared contract or an AB 04 execution as a part of an ABT 06 contract could be used for the foundation and an ABT 06 execution for the office building. Some of the other interviewees did although mention how the complex soil in Gothenburg wouldn’t be an issue for considering an ABT 06 or AB 04 as the City of Gothenburg could guide the process and that the contractors in Gothenburg has got so much experience with constructing in Gothenburg that they know how to handle it.

6 Conclusion

The aim of this thesis was to investigate the differences between AB 04 and ABT 06, and how these differences influence the outcomes of office constructions in Gothenburg. The findings reveal that the most fundamental differences between the AB 04 and ABT 06 lies in their project execution structures. While AB 04 adopts a Design-bid-build (DBB) execution the ABT 06 involves a Design-build (DB) execution.

While this is the intended execution structure the study showcased how the ABT 06 is often implemented in a distorted way with closer resemblance to DBB. This appears to stem from a knowledge gap within the sector, where the knowledge regarding AB 04 and ABT 06 is low among several stakeholders particularly on the client side of the sector. This has accordingly led to problems as the AB contracts are written with the traditional AB 04 and ABT 06 executions in mind and with a balanced distribution of risks. As a result, risks are pushed to the client side who become responsible for the design, like in an DBB execution, and the economic and time saving benefits of the ABT 06 are minimized as the contractor's freedom is diminished. This includes that the contractor can't design in synergies with the execution and can't work broadly with suppliers to decrease costs and so forth this benefit disappears.

That ABT 06 is performed in another way than intended also affects the project quality as when contractors lack full design responsibility, the discussed quality disadvantages in shortcutting and cheapest alternatives are reduced. This improvement is although conditional as it only holds if the client possesses the competence and resources to produce detailed and high-quality design documents. Otherwise, the risk of low quality remains high, as quality is to a larger extent controlled by the design documents in DBB executions.

In the case of office buildings in Gothenburg, most interviewees´ considered them to be well-suited for ABT 06 executions, due to their generally low complexity. However, this should not justify a standardized approach. The study shows how each project must be assessed on its unique conditions and the client´s priorities. So forth depending on whether the client sees control, quality, cost, time or social relationships as more import the client should go with different types of contracts.

The research highlights that AB 04 offers greater control over quality, design and execution, while ABT 06 can provide cost and time reduction along with fewer ÄTA-works. In that sense, if design, control of the project and material quality are key priorities, AB 04 may be the more appropriate choice while if time and cost efficiency are prioritized, ABT 06 could offer greater value.

Finally, no matter what contract form is chosen social relations emerged as fundamental. While the social aspect is similar between the two contract forms collaboration emerged as a key to ensuring a successful project outcome. An effective cooperation can compensate for contractual limitations, while poor collaboration can derail a project regardless of whether AB 04 or ABT 06 is used.

So forth decisions regarding which contract form to use, should be based on the nature of the project and the competence of the client. The client must define their priorities and asses the complexity of the intended project, while at the same time understanding their own capabilities, resources, and limitations for describing and managing a construction project.

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8 Appendix

A. Interview questions – Contractor

- Could you describe yourself and your role within the construction industry?
- What is your view on the standard contract templates AB 04 and ABT 06? Are you familiar with the differences between them?
- Do you find the templates easy to use and understand?
- Have you been involved in projects using both types of contracts? Do you have a preference? If so, why?
- What are the most common challenges you encounter when working with AB 04 or ABT 06?
- Do you find that the choice of contract form affects economic, qualitative, and social aspects in different ways?
- Do you feel that you are given genuine ABT projects, or are they heavily steered? To what extent, and why do you think that is the case?
- How do you perceive change orders (ÄTA) in AB 04 compared to ABT 06?
- What contract type would you prescribe for a office building in Gothenburg?
- Is there anything else you would like to add about the standard forms that you think would be important for me to consider in my work?

B. Interview questions – Client

- Could you describe yourself and your role within the construction industry?
- What is your view on the standard contract templates AB 04 and ABT 06? Are you familiar with the differences between them?
- Do you find the templates easy to use and understand?
- Have you been involved in projects using both types of contracts? Do you have a preference? If so, why?
- What are the most common challenges you encounter when working with AB 04 or ABT 06?
- Do you find that the choice of contract form affects economic, qualitative, and social aspects in different ways?
- Do you feel that you give genuine ABT projects, or are they heavily steered? To what extent, and why do you think that is the case?
- How do you perceive change orders (ÄTA) in AB 04 compared to ABT 06?
- What contract type would you prescribe for an office building in Gothenburg?
- Is there anything else you would like to add about the standard forms that you think would be important for me to consider in my work?

C. Interview questions – Consultant

- Could you describe yourself and your role within the construction industry?
- What is your view on the standard contract templates AB 04 and ABT 06? Are you familiar with the differences between them?
- Do you find the templates easy to use and understand?

- Have you been involved in projects using both types of contracts? Do you have a preference? If so, why?
- What are the most common challenges you encounter when working with AB 04 or ABT 06?
- Do you find that the choice of contract form affects economic, qualitative, and social aspects in different ways?
- How do you perceive change orders (ÄTA) in AB 04 compared to ABT 06?
- What contract type would you prescribe for an office building in Gothenburg?
- Is there anything else you would like to add about the standard forms that you think would be important for me to consider in my work?

D. Interview questions – Legal counsel

- Could you describe yourself and your role within the construction industry?
- What is your view on the standard contract templates AB 04 and ABT 06? Do you find the templates clear and easy to understand?
- What are the most common challenges that arise in construction projects depending on the chosen contract form?
- Are there any common mistakes in contracts or execution that typically lead to disputes regarding change orders (ÄTA)?
- How do you think procurement and contracting would work if the standard agreements did not exist?
- Is there anything else you would like to add about the standard forms that you think would be important for me to consider in my work?

E. Thematic Codebook for Interview Analysis

Theme 1: Knowledge, Interpretation & Attitudes

- **Knowledge**: General understanding or lack thereof regarding contract forms.
- **Interpretable**: How easily the contract terms can be understood or interpreted.
- **Accessibility and Helping Literature**: Availability and usefulness of support material.
- **Preconceived Notions**: Assumptions or biases held about contract forms.
- **Uncertainties**: Ambiguity or confusion related to contract application or content.
- **Opinions on Contract Forms**: Subjective views and preferences.
- **Miss Use of ABT**: Incorrect or inappropriate use of ABT 06.
- **Working Without Standard Agreements**: Challenges arising from non-standardized contract usage.
- **Cultural Differences**: Influence of cultural context on contract understanding and application.

Theme 2: Risk, Responsibility & Control

- **Responsibility**: Allocation and understanding of obligations between parties.
- **Cheating**: Concerns about unethical behavior under unclear contracts.
- **Control**: Level of decision-making power retained by the client or contractor.
- **Balanced Risks**: Equitable sharing of risks between stakeholders.
- **Design Freedom**: Flexibility in design allowed under certain contracts.
- **Consultant Design**: The role and influence of consultants in the design process.

- **Modifications**: Changes made to standard contracts and their implications.

Theme 3: Relationships & Collaboration

- **Cooperation Between Contractor and Client**: Quality and effectiveness of collaboration.
- **Trust in the Sector**: General trust levels among stakeholders.
- **Social**: Broader social factors influencing contractual relationships.

Theme 4: Economic & Resource Considerations

- **Economy**: Cost-efficiency and financial performance of contract forms.
- **Resource Intensity**: The resource demands of different contracts.
- **System Optimizing**: Efficiency and optimization enabled by contract structures.

Theme 5: Contract Characteristics & Execution Challenges

- **ABT 06 Advantages**: Positive attributes of ABT 06.
- **AB 04 Advantages**: Positive attributes of AB 04.
- **Disadvantage of ABT 06**: Challenges or risks associated with ABT 06.
- **Contract Details**: Specific elements and clauses of contracts.
- **Common Challenges for ABT 06**: Frequently mentioned problems using ABT 06.
- **Common Challenges for AB 04**: Frequently mentioned problems using AB 04.
- **ÄTA (Change Orders)**: Scope changes and their management.
- **Quality**: Construction quality in relation to contract form.
- **Contractor Competence**: The skill level of contractors.
-

Theme 6: Decision factors & Project Realities

- **Differences to Reality**: Discrepancy between plans and actual execution.
- **Office Building**: Context-specific considerations in office construction.
- **Preferred Contract Form**: Expressed preferences for either AB 04 or ABT 06.
- **Factors for Choosing Contracting Form**: Criteria used when selecting contract type.
- **Type Projects for AB 04 and ABT 06**: Project types best suited to each contract.

F. List of Codes

[MAXQDA 24 Coded Segments]

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